DOCUMENT RESUME

ED 149 158 08 CE 014 539

TITLE	Professional Teacher Education Module Series. Develop a Course of Study, Module A-8 of Category A--Program Planning, Development, and Evaluation.
INSTITUTION	Ohio State Univ., Columbus. National Center for Research in Vocational Education.
SPONS AGENCY	National Inst. of Education (DHEW), Washington, D.C.
PUB DATE	78
NOTE	56p.; For related documents see CE 011 532, CE 011 534, CE 014 295-355, CE 014 358 (student guide), CE 014 588 (resource person's guide), CE 014 532-539, and CE 014 589-591
AVAILABLE FROM	American Association for Vocational Instructional Materials (AAVIM), 120 Engineering Center, University of Georgia, Athens, Georgia 30602 ($3.00)
EDRS PRICE	MF-$0.83 HC-$3.50 Plus Postage.
DESCRIPTORS	Course Content; Course Descriptions; *Course Organization; *Curriculum; Curriculum Development; Curriculum Guides; Educational Planning; Individualized Curriculum; Job Skills; Learning Activities; Learning Experience; Learning Modules; Performance Based Teacher Education; *Performance Criteria; Post Secondary Education; Program Development; Program Planning; Resource Materials; *Scheduling; Secondary Education; *Teaching Skills; Units of Study; *Vocational Education

ABSTRACT

This eighth in a series of eleven learning modules on program planning, development, and evaluation is designed to assist secondary and postsecondary vocational teachers in preparing and updating vocational education courses of study. (A course of study describes who is to be taught, what is to be taught, how much time will be allotted to each instructional area, and what references, resources, tools, and equipment will be used.) Introductory sections relate the competencies dealt with here to others in the program and list both the enabling objectives for the three learning experiences and the resources required. Materials in the learning experiences include required readings (e.g., basic components of a course of study, development procedures, sequencing objectives, time allocations), self-check quizzes, model answers, a case study to critique, a model critique, and the teacher performance assessment form for use in evaluation of the terminal objective. (The modules on program planning, development, and evaluation are part of a larger series of 100 field-tested performance-based teacher education (PBTE) self-contained learning packages for use in preservice or inservice training of teachers in all occupational areas.) (SH)

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ED149158

MODULE

A-8

Develop a Course of Study

MODULE A-8 OF CATEGORY A—PROGRAM PLANNING, DEVELOPMENT, AND EVALUATION PROFESSIONAL TEACHER EDUCATION MODULE SERIES

The Center for Vocational Education
The Ohio State University

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1978

ISBN 0-914452-13-4

Published and distributed by the **American Association for Vocational Instructional Materials (AAVIM),** 120 Engineering Center, University of Georgia, Athens, Georgia 30602, (404) 542-2586.

CE 014 539

FOREWORD

This module is one of a series of 100 performance-based teacher education (PBTE) learning packages focusing upon specific professional competencies of vocational teachers. The competencies upon which these modules are based were identified and verified through research as being important to successful vocational teaching at both the secondary and post-secondary levels of instruction. The modules are suitable for the preparation of teachers in all occupational areas.

Each module provides learning experiences that integrate theory and application; each culminates with criterion referenced assessment of the teacher's performance of the specified competency. The materials are designed for use by individual or groups of teachers in training working under the direction and with the assistance of teacher educators acting as resource persons. Resource persons should be skilled in the teacher competency being developed and should be thoroughly oriented to PBTE concepts and procedures in using these materials.

The design of the materials provides considerable flexibility for planning and conducting performance-based preservice and inservice teacher preparation programs to meet a wide variety of individual needs and interests. The materials are intended for use by universities and colleges, state departments of education, post-secondary institutions, local education agencies, and others responsible for the professional development of vocational teachers. Further information about the use of the modules in teacher education programs is contained in three related documents: **Student Guide to Using Performance-Based Teacher Education Materials, Resource Person Guide to Using Performance-Based Teacher Education Materials** and **Guide to Implementation of Performance-Based Teacher Education.**

The PBTE curriculum packages are products of a sustained research and development effort by The Center's Program for Professional Development for Vocational Education. Many individuals, institutions, and agencies participated with The Center and have made contributions to the systematic development, testing, revision, and refinement of these very significant training materials. Over 40 teacher educators provided input in development of initial versions of the modules; over 2,000 teachers and 300 resource persons in 20 universities, colleges, and post-secondary institutions used the materials and provided feedback to The Center for revision and refinement.

Special recognition for major individual roles in the direction, development, coordination of testing, revision, and refinement of these materials is extended to the following program staff: James B. Hamilton, Program Director; Robert E. Norton, Associate Program Director; Glen E. Fardig, Specialist; Lois Harrington, Program Assistant; and Karen Quinn, Program Assistant. Recognition is also extended to Kristy Ross, Technical Assistant; Joan Jones, Technical Assistant; and Jean Wisenbaugh, Artist for their contributions to the final refinement of the materials. Contributions made by former program staff toward developmental versions of these materials are also acknowledged. Calvin J. Cotrell directed the vocational teacher competency research studies upon which these modules are based and also directed the curriculum development effort from 1971–1972. Curtis R. Finch provided leadership for the program from 1972–1974.

Appreciation is also extended to all those outside The Center (consultants, field site coordinators, teacher educators, teachers, and others) who contributed so generously in various phases of the total effort. Early versions of the materials were developed by The Center in cooperation with the vocational teacher education faculties at Oregon State University and at the University of Missouri-Columbia. Preliminary testing of the materials was conducted at Oregon State University, Temple University, and University of Missouri-Columbia.

Following preliminary testing, major revision of all materials was performed by Center Staff with the assistance of numerous consultants and visiting scholars from throughout the country.

Advanced testing of the materials was carried out with assistance of the vocational teacher educators and students of Central Washington State College; Colorado State University; Ferris State College, Michigan; Florida State University; Holland College, P.E.I., Canada; Oklahoma State University; Rutgers University; State University College at Buffalo, Temple University; University of Arizona; University of Michigan-Flint; University of Minnesota-Twin Cities; University of Nebraska-Lincoln; University of Northern Colorado; University of Pittsburgh; University of Tennessee; University of Vermont; and Utah State University.

The Center is grateful to the National Institute of Education for sponsorship of this PBTE curriculum development effort from 1972 through its completion. Appreciation is extended to the Bureau of Occupational and Adult Education of the U.S. Office of Education for their sponsorship of training and advanced testing of the materials at 10 sites under provisions of EPDA Part F, Section 553. Recognition of funding support of the advanced testing effort is also extended to Ferris State College, Holland College, Temple University, and the University of Michigan-Flint.

Robert E. Taylor
Executive Director
The Center for Vocational Education

THE CENTER FOR VOCATIONAL EDUCATION
The Ohio State University • 1960 Kenny Road • Columbus, Ohio 43210

The Center for Vocational Education's mission is to increase the ability of diverse agencies, institutions, and organizations to solve educational problems relating to individual career planning, preparation, and progression. The Center fulfills its mission by:

- Generating knowledge through research.
- Developing educational programs and products.
- Evaluating individual program needs and outcomes.
- Installing educational programs and products.
- Operating information systems and services.
- Conducting leadership development and training programs.

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AMERICAN ASSOCIATION FOR VOCATIONAL INSTRUCTIONAL MATERIALS

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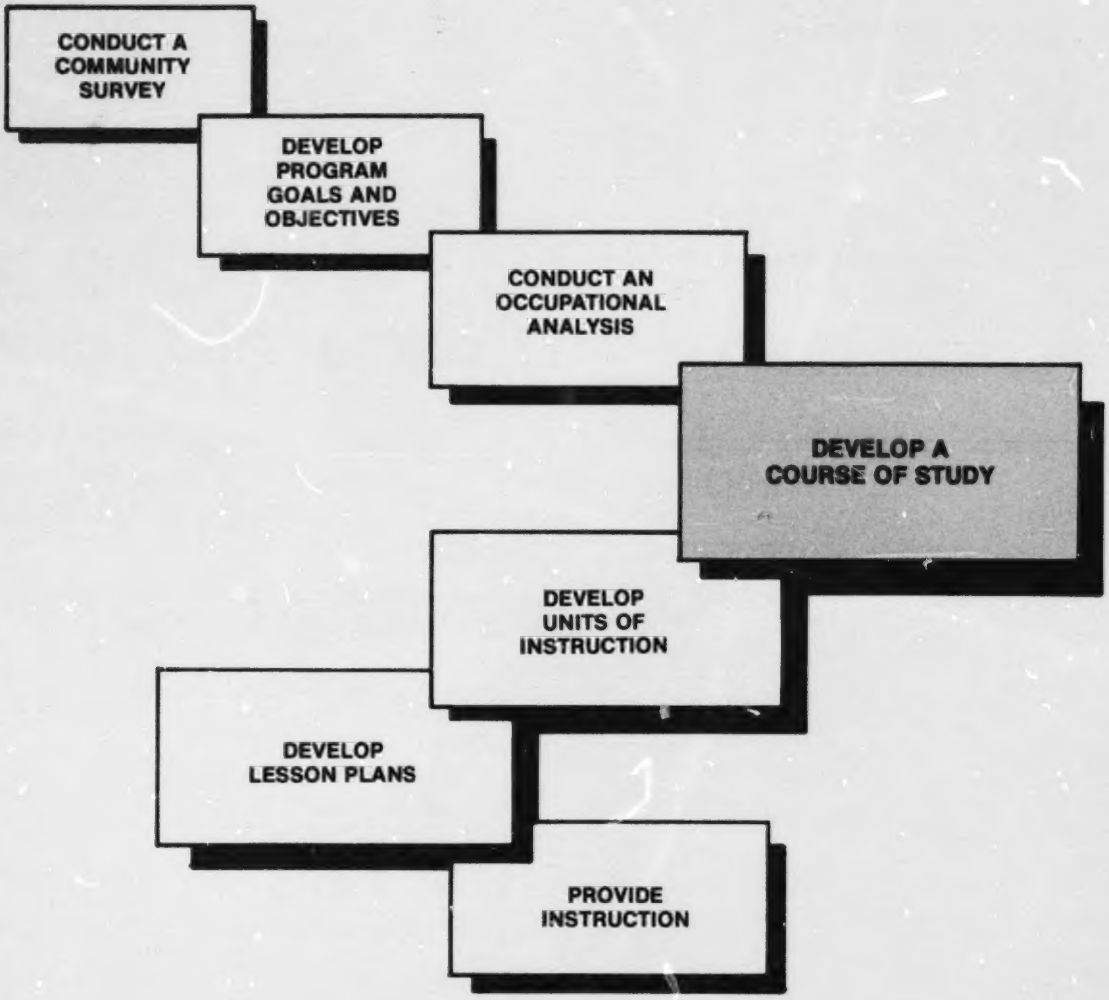
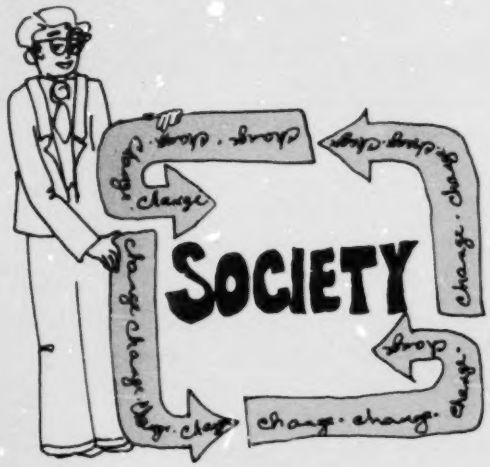
The American Association for Vocational Instructional Materials (AAVIM) is an interstate organization of universities, colleges and divisions of vocational education devoted to the improvement of teaching through better information and teaching aids.



CURRICULUM DEVELOPMENT PROCESS

INTRODUCTION

Instruction in the various specialty areas of a vocational education program must reflect the rapid changes taking place in today's society. Students must be provided occupationally related experiences which will help meet their needs and the special conditions and requirements of their career choices.



While several vocational teachers will probably be responsible for deciding what an institution's total vocational education program will be, you, as an individual vocational teacher, will be expected to develop and update the courses of study to be used in your own occupational area. To develop and/or update the courses of study, you may be asked to perform one or more of the several operations identified in the figure on p. 2.

A good vocational education course of study describes who is to be taught, what is to be taught, how much time will be allotted to each instructional area, and what references, resources, tools, and equipment will be used. The course of study outlines and provides structure for the various units of instruction to be developed and taught. And, in turn, the units of instruction become the basis for developing relevant lesson plans to guide the daily student learning process.

The major role of the teacher in developing a course of study is to provide the technical input and managerial skill necessary to select, schedule, and plan for teaching the most relevant instructional units. You must do this in such a way that every student is actively engaged in a **planned** learning activity at all times.

This module is designed to help you, as a teacher, to develop the knowledge and skills necessary to prepare and update vocational education courses of study.

ABOUT THIS MODULE

Objectives

Terminal Objective: While working in an actual school situation, develop a course of study. Your performance will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 47–49 (*Learning Experience III*).

Enabling Objectives:

1. After completing the required reading, demonstrate knowledge of the purposes and basic components of a course of study (*Learning Experience I*).
2. After completing the required reading, critique the performance of a hypothetical teacher in a given case study in developing a course of study (*Learning Experience II*).

Resources

A list of the outside resources which supplement those contained within the module follows. Check with your resource person (1) to determine the availability and the location of these resources, (2) to locate additional references in your occupational specialty, and (3) to get assistance in setting up activities with peers or observations of skilled teachers, if necessary. Your resource person may also be contacted if you have any difficulty with directions, or in assessing your progress at any time.

Learning Experience I

Optional

Courses of study (curriculum guides, course outlines) in your service area which you can review.

Learning Experience II

Optional

A vocational teacher or curriculum specialist experienced in developing courses of study with whom you can consult

Learning Experience III

Required

An actual school situation in which you can develop a course of study.

A resource person to assess your competency in developing a course of study.

This module covers performance element numbers 34–38 from Calvin J. Cotrell *et al., Model Curricula for Vocational and Technical Teacher Education: Report No. V* (Columbus, OH: The Center for Vocational Education, The Ohio State University, 1972). The 384 elements in this document form the research base for all The Center's PBTE module development.

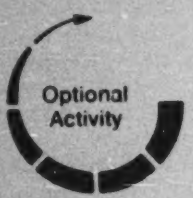
For information about the general organization of each module, general procedures for their use, and terminology which is common to all 100 modules, see About Using The Center's PBTE Modules on the inside back cover.

Learning Experience I

OVERVIEW

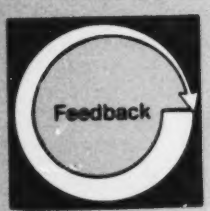
After completing the required reading, demonstrate knowledge of the purposes and basic components of a course of study.

You will be reading the information sheet, The Course of Study, pp. 6–15.



You may wish to locate and review courses of study (curriculum guides, course outlines) in your service area.

You will be demonstrating knowledge of the purposes and basic components of a course of study by completing the Self-Check, pp. 15–17.



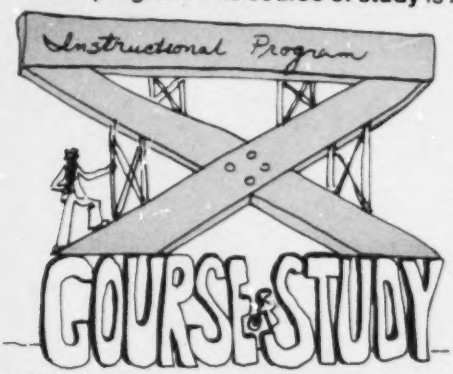
You will be evaluating your competency by comparing your completed Self-Check with the Model Answers, pp. 19–20.

Activity

For information on the purposes of developing a written course of study for a vocational course or program, and the essential elements of such a document, read the following information sheet:

THE COURSE OF STUDY

A "course of study" is a vital guide to instruction in a vocational program, yet it is almost invisible. You are not likely to see it lying on the teacher's desk, you will not find it displayed on the bulletin board, nor does the teacher hold it in his/her hand during a lesson to the class. Yet it is the foundation for just about everything that goes on in the instructional program. The **course of study** is in fact



an **official guide**, or **outline**, which describes in broad terms a particular vocational program or specific course, its **general objectives**, the **subject matter** of the course, and the **resources** necessary for the achievement of the objectives.

This guide may be prepared by teachers, supervisors, or by some combined group, and it is used by teachers as a base on which to build units of instruction, classroom lessons, student laboratory activities, homework assignments, and final examinations. Together, the teacher and administrator will consult the course of study as they order new equipment for the program, or plan the construction of a new facility.

You might not be able to instantly recognize a course of study if you did, by chance, find one out in the open in a school. Depending on the environment in which they were conceived and developed, courses of study may be observed in a variety of sizes, shapes, and formats. In various educational localities, they even are called by different names, such as "course outline", or "curriculum guide."

A course of study may be very thin and spare—virtually nothing but a simple outline of the topics to be covered in the course. Or, the course of study may be a hefty volume with great lists of tasks, scores of objectives, detailed instructional plans, evaluation instruments, instructional aids, project plans, teaching steps, and reams of references. Most courses of study will fall somewhere between these two extremes, containing the essential information about the general objectives and content of the course.

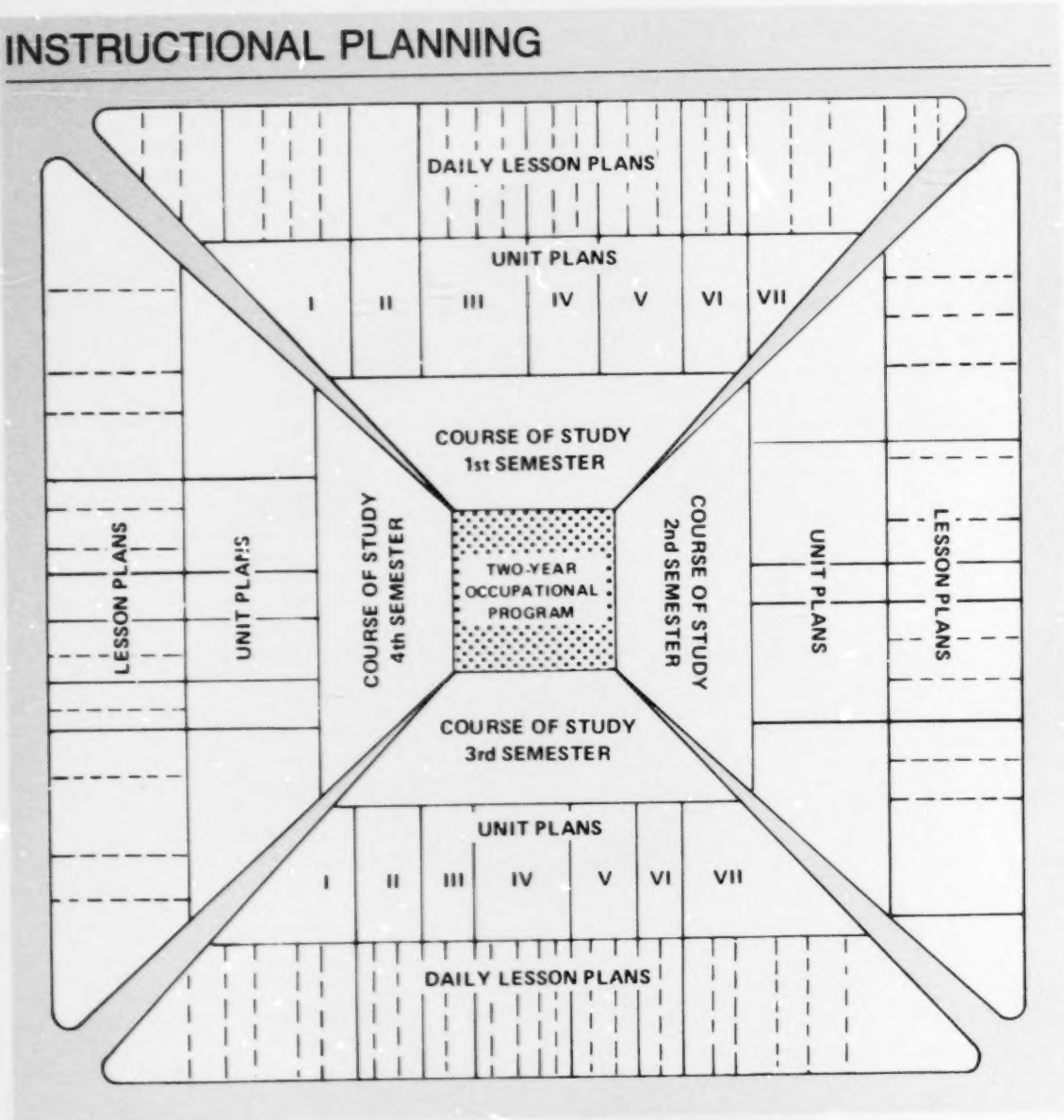
There are few generally accepted attributes of a course of study, because it often is developed to serve particularly defined needs. Each vocational service area tends to organize its course of study to best suit its own ways of presenting instruction. School districts may develop their own format in order to make the course of study more comprehensible to teachers and supervisors within the system. In any case, a course of study usually deals in broad outlines, leaving the detailed instructional planning to those other two parts of the teacher's planning responsibilities: the unit plan, and the daily lesson plan.

While the course of study describes an entire vocational course or program in broad terms, **unit plans** focus on one section of subject matter in the course. They are organized around one or more topics, problems, or skills found in the course outline. They describe the teacher's instruction, the student learning experiences, and the evaluation procedures to be used. Still more specific is the **daily lesson plan**. Derived from the plans for a total unit, the lesson plan describes exactly what is to take place in the classroom or laboratory on each day in which students are engaged in a unit of instruction. The relationships among the course of study, unit plans, and daily lesson plans are graphically portrayed in Figure 1.

In addition to its being the basic planning guide from which all the other instructional plans are drawn, the course of study serves several other purposes. It is the official document which describes the scope and substance of the vocational program. As such, it is subject to approval by the school administration and serves as a reference when administrative decisions about the program need to be made.

For example, in a decision about the amount of credit to be awarded students for completion of a course, the course of study and its time allocations

FIGURE 1



may be consulted. When a school is being evaluated for accreditation, the visiting committee will usually examine the course of study and note its relation to the program facility and the student learning activities. As a new school building is being planned, the course of study is used as one basis for writing the educational specifications.

The course of study, however, is not written by administrators, but by subject matter experts. As an individual vocational teacher, you may be involved in a number of ways. Sometimes the guide is developed by **curriculum specialists** in the state department of education and furnished to the schools, or it may emerge from a university-based **curriculum development laboratory**. Quite frequently, the local school system takes responsibility for the development of the course of study, involving vocational teachers as members of a **curriculum development team**.

In smaller school systems, or in independent technical institutions, it is not unusual for an **individual teacher** to be given **sole responsibility** for

the whole job, with the administration involved only to the extent of giving final approval to the completed document. It is not uncommon for the vocational teacher to take over an existing program and find an inadequate course of study that must be **revised**, **enriched**, and/or **brought up to date**. Whatever your specific participation, the basic developmental processes will generally be the same, and the final products will have many similar characteristics.

Basic Components of a Course of Study

As already mentioned, there is little agreement as to what constitutes an ideal course of study. Different states as well as different service areas, even within the same state, often utilize a different structure and format for their courses of study.

The **six basic components** of a course of study described here represent the minimum essential elements which are common to many vocational courses of study. The terms used to describe these

six components, however, vary from service area to service area in many cases. The most common variations found are mentioned in the following descriptions of the various components.

Course Description

A course description indicates the general instructional areas of concern and the **general goals and purposes** of the course. Several other phrases such as "program description," "purpose of course," and "nature of course" are sometimes used to describe the same thing. Specific course descriptions should indicate—

- **who** is to be taught
- **what** they are be taught
- what **degree of skill** is to be attained
- **where** the training is to be used
- general **employment conditions**

The **who** specifies the course entrant—junior, senior, graduate of a two-year program, individual with two years' experience, etc. From this information, experience requirements can be inferred if they are not stated. Aptitude and physical requirements are sometimes stated. These requirements may become at least part of the criteria for selection of students.

The **what** identifies the occupation or part of the occupation for which preparation is to be provided—carpenter, welder, file clerk, nurses aide, etc. The **degree of skill to be attained** refers to the level of ability students should have upon completion of the course. The degree of skill to be achieved by students will help determine the length of the course.

Where refers to the job situation in which the work will ultimately be performed, thus further specifying the boundaries of the course. **Conditions** refer to readiness conditions as well as to physical environmental conditions (e.g., temperature extremes).

The course description may include other relevant and useful information such as student **prerequisites** (e.g., all students must have completed an introductory horticulture class before they can enroll in greenhouse management), or the necessity of student participation in on-the-job **cooperative training** for a specified number of hours while enrolled in the course. The **basis** upon which **instructional content** has been determined may also be indicated.

Sample 1 illustrates a course description developed for an accounting/computing course of study.

SAMPLE 1

COURSE DESCRIPTION

The accounting and computing vocational instructional program shall be a two-year, eleventh and twelfth grade program designed to prepare students for entry-level employment as bookkeeping and accounting clerks, payroll clerks, posting and billing machine operators, bookkeeping machine operators, and operators of programmable accounting machines and related data-entry equipment.

The students will also be taught the general office skills necessary for successful employment in most office work. Typewriting, filing, telephone techniques, and the operation of calculating machines will be taught as they relate to the field of accounting and computing. Youth activities are an integral part of the instructional program in developing poise, confidence, leadership abilities, civic responsibility, and communications skills, and in giving awards and recognition, and as such will be taught in both the laboratory and related instruction.

The instructional program content is based upon an occupational analysis of the accounting field and adjusted to reflect local employment needs and opportunities as determined by the instructors, administrators, and advisory committee.

Course Content

A major portion of any vocational course of study will be concerned with the instructional content to be taught. Content may be presented as topics, as units, as related instruction, as jobs to be completed, as tasks to be completed, as common competencies, as individual competencies, as instructional areas, etc. The use of **unit titles** and **instructional areas** is probably most common, although recently, with the increased emphasis upon competency-based instruction, describing content areas in terms of the **needed competencies** is gaining in popularity.

Regardless of the specific terminology used, the **course content** section of a course of study should clearly indicate the specific knowledge and skills to be acquired by students. Unit titles are often presented in an action form so as to indicate clearly the types of learning activity involved and the type of learning outcome expected. Some examples of action-oriented unit titles for a two-year accounting/computing course of study follow.

- Operate Data-Entry Equipment
- Interpret Accounting Data
- Record Cash Receipts
- Prepare Tax Reports
- Prepare Employee Payroll Records
- Operate Bookkeeping Machines
- Maintain Inventory Records

Course Objectives/Student Outcomes

Courses of study commonly specify the general objectives or learning outcomes to be achieved. More specific performance objectives which identify in some detail the "how well" and the "conditions" under which performance of specific behaviors is to occur are normally and more appropriately left to be developed as part of units of instruction and/or daily lesson plans.

Course objectives typically focus on the **overall abilities** or competencies to be acquired by the student, and sometimes include the general occupational standards of performance expected by industry. This general type of objective is intended as a guide to aid the teacher in the development of student performance objectives once the specific needs, interests, and abilities of his/her students are known and the specific standards of performance required by industry have been determined.

The following are samples of course objectives which **do not** indicate any standards or levels of achievement required.

- to develop agricultural competencies needed by individuals engaged in or preparing to engage in horticultural occupations
- to develop an understanding of, and appreciation for, career opportunities in horticulture and the preparation needed to enter and progress in horticultural occupations
- to develop those abilities in human relations which are essential in horticultural occupations
- to develop the abilities needed to exercise and follow effective leadership in fulfilling occupational, social, and civic responsibilities
- to provide supervised educational experiences for students in the instructional area of retail floriculture

The following are samples of course objectives which **do** indicate, at least to a general degree, the standards of performance expected of students.[1]

The student should be able to—

- identify and explain the basic functions of the major parts of a chain saw, and explain its operating principles, with that accuracy required to properly operate and care for the saw
- select the appropriate chain saw to use for a job, considering the saw capabilities and the working conditions such as bucking, limbing, or felling.
- prepare to start, and start, a chain saw, including refueling, using the proper procedures to prevent starting troubles and accidents
- operate, and adjust engine load and working parts on a chain saw, using procedures which promote optimum engine efficiency and operator safety
- properly clean a chain saw to prevent overheating, promote engine efficiency, and prevent excessive wear due to dirt entering the engine

Time Allocations

Another important component of the course of study, "time allocations," indicates the suggested amount of instructional time, usually in terms of hours or class periods, that should be spent on each general instructional area and/or on each specific unit of instruction.

It should be stressed that the time allocations appearing in a course of study should be viewed as a guide only, and not accepted as hard-and-fast minimums that must be rigidly adhered to. Rather, the time specified for the various units of instruction will frequently need to be adjusted to satisfy the training needs of a particular group of students.

Sample 2 is a time allocation table from an actual core course of study for vocational agriculture. This particular time allocation table reflects the suggested number of class or laboratory instructional periods (50 minutes each) that should be devoted to each major instructional area, during each of four years.

Most courses of study will further break down the suggested time allocations on a unit-by-unit, topic, or block basis. An example of this type of time distribution prepared for the instructional area, "Dairy Enterprise," is presented in Sample 3.

1. Adapted from *Career Preparation in Forestry, A Curriculum Guide for High School Vocational Agriculture* (Columbus, OH: The Ohio State University, 1974).

SAMPLE 2

TIME ALLOCATION TABLE

VOCATIONAL AGRICULTURE[2]

	Periods Per Year				
Instructional Area	**I**	**II**	**III**	**IV**	**TOTAL**
Orientation and Guidance	15	0	0	3	18
Supervised Farming Programs	17	13	13	13	56
Farm Management and Agric. Economics	20	26	50	73	169
Dairy Enterprise	27	27	45	38	137
Land Use and Conservation	11	20	17	16	64
Forage Crops	0	0	25	18	43
Corn Enterprise	5	3	8	6	22
Small Grains	2	5	9	0	16
Leadership Training	5	8	3	3	19
Agricultural Mechanics	68	68	170	170	476
	170	170	340	340	1020

2. Adapted from "A Core Course of Study for Vocational Agriculture" (Albany, NY: The University of the State of New York, The State Education Department, Bureau of Agricultural Education, 1960), p. 3. (Mimeographed)

SAMPLE 3

TIME ALLOCATION TABLE

DAIRY ENTERPRISE[3]

Unit	Periods Per Unit/Season				
	Ag 1	Ag 2	Ag 3	Ag 4	
D 1 Selecting foundation animals for my farming program	7 F				
D 2 Selecting foundation animals for the dairy herd			10 F		
D 3 Feeding dairy calves from birth to six months	10 F				
D 4 Feeding dairy heifers six months and over		3 F			
D 5 Managing and caring for young stock		2 W			
D 6 Registering dairy stock		4 F			
D 7 Feeding the dairy herd			15 W		
D 8 Seasonal adjustments in feeding the dairy herd				8 F	
D 9 Maintaining the herd health				10 F	
D10 Planning our breeding program			10 F		
D11 Keeping breeding and health records		5 W	2 F	2 F	
D12 Keeping production records	10 S	3 W	3 W	3 W	
D13 Analyzing production records			5 F	3 F	
D14 Using proper milking procedures		10 W			
D15 Marketing the products of the dairy herd			12 F		
Total	27	27	57	26	137

Supplemental:

1. Care of the dairy cow at calving time
2. Fitting and showing dairy animals
3. Increasing efficiency in milk production through (1) proper milk handling equipment (2) barn arrangement (3) material handling (see agricultural mechanics section)

3. "A Core Course of Study for Vocational Agriculture," pp. 5–6.

Note that in this particular time allocation table, the season (F-fall, W-winter, S-spring), as well as the number of instructional periods per unit, are given. This feature is important in production agriculture courses of study, because the timeliness of a particular unit of instruction can add relevancy. For example, teaching a unit on "Selecting Seed Corn" in the spring is more likely to be meaningful and provide opportunities for immediate application than if taught in the fall. However, time of year designations are not found in most course of study time allocation tables.

References and Audiovisual Materials

Most courses of study provide a list of related printed references and audiovisual materials. Although selective in nature, lists contained in core courses of study and curriculum guides frequently provide more references than would normally be required to teach the various units listed in the course of study so as to give the teacher an opportunity to make his/her own final selections.

The following is a partial list of suggested refer-

ences for instructional units in vocational agriculture.[4]

- *ABC's of Hand Tools*. Detroit, MI: General Motors Building, Public Relations Staff. 28 pages.
- *The ABC's of Spray Equipment*. Third Edition. Toledo, OH: The De Vilbiss Company, 1954. 64 pages.
- *Advertising and Promotion*. Columbus, OH: The Ohio State University, Ohio Agricultural Education Curriculum Materials Service, 1971. 32 pages.
- *Agribusiness: Metal Working*. Montgomery, AL: Alabama State Department of Education, Agricultural Education Service.
- *Agricultural Business Procedures*. Urbana, IL: University of Illinois, Vocational Agricultural Service. 32 pages.
- *Agricultural Mechanics — Equipment*. College Station, TX: Texas A&M University, Department of Agricultural Education, 1967. 500 pages.
- *Agricultural Mechanization: A Guide for Planning Occupational Programs*. Albany, NY: The University of the State of New York, Bureau of Secondary Curriculum Development, 1969.
- *Agricultural Salesmanship: Course Outline for Agricultural Machinery-Service Occupations*. Columbus, OH: The Ohio State University, The Center for Vocational Education, 1965. 32 pages.

Tools, Equipment, Supplies, and Facilities

The final section of most courses of study contains a list of recommended tools, equipment, and supplies needed to teach the various units contained in the course of study. For example, the following partial list of tools, equipment, and supplies might be recommended for programs in agricultural mechanics.

- Drill press - variable speed
- Arc welders - 225 amp. A.C.
- Carbon arc torch - optional
- Acetylene welder sets - with two stage regulators
- Oxygen tanks
- Acetylene tanks
- Cylinder trucks
- Steam jenny
- Electrical engraving tool
- Clutch aligning tool

The quantity of items and the amount of facility space needed will, of course, depend heavily upon the number of students to be enrolled, the nature of the learning activities to be used, and the length of the course offering.

A sample partial list of some suggestions for planning facilities in agricultural mechanics is shown in Sample 4.

4. Adapted from *Career Preparation in Agricultural Equipment and Mechanics, A Curriculum Guide for High School Vocational Agriculture* (Columbus, OH: The Ohio State University, 1974).

SAMPLE 4

FACILITIES SUGGESTIONS[5]

SUGGESTED FACILITIES FOR AGRICULTURAL EQUIPMENT AND MECHANICS

The nature and extent of the facilities needed for agricultural equipment and mechanics instruction will be influenced by the projected enrollments, the planned use of the facilities by continuing education and other groups, and the areas of emphasis to be included in the course of study. The suggestions which follow are to be considered only as guides for school facility planners and architects.

Space Allocations

Recommended **minimum** space allocations for accommodating twenty students per section include:

classroom—750 square feet

office/conference room—200 square feet

shop or laboratory—7,000 square feet

outside paved and fenced storage area—3,500 square feet, of which 1,500 square feet is covered by roof

Classroom

The classroom should be equipped with movable tables and chairs to accommodate a minimum of twenty students, a tack board, sufficient chalkboard space, a teacher's desk or movable teacher workbench, filing cabinets, shelf space, a projection screen, and adequate electrical outlets.

A small display and sales counter with a cash register and calculator can be set up for students to use. Such equipment may be obtained from the agricultural business supplies and service program when such a program is offered in the same school.

Consideration should be given to providing an entrance from the shop to the classroom of at least 7 feet wide to permit bringing shop items into the classroom when desired.

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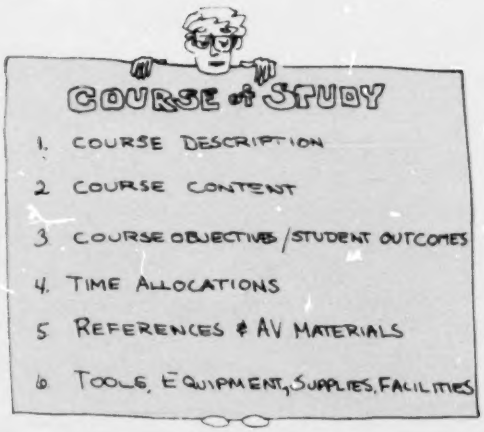
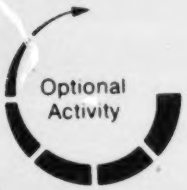
5. *Career Preparation in Agricultural Equipment and Mechanics*, p. 8.

In addition to the "space allocations" and "classroom" sections presented in Sample 4, the curriculum guide referred to also contains recommendations regarding other important aspects of facility planning such as specifications for an office/conference room, a laboratory, the floors, doors, tool storage area, locker facilities, lighting, ventilation, electrical service, water, heating, compressed air, etc. While not all guides or courses of study will need to address all of these areas, those areas which are of special concern to the particular program or course being offered should be described.

While the six components described in this information sheet are not always found in a course of study, there is general consensus that each of the components described here should be present in any **well-developed** course of study. In some states, a course of study is more broadly defined to include such areas as specific instructional management strategies and specific learning and evaluation activities. In most states, however, these areas are included in either the more detailed units of instruction, or the even more detailed lesson plans.[6]


COURSE of STUDY
1. COURSE DESCRIPTION
2. COURSE CONTENT
3. COURSE OBJECTIVES / STUDENT OUTCOMES
4. TIME ALLOCATIONS
5. REFERENCES & AV MATERIALS
6. TOOLS, EQUIPMENT, SUPPLIES, FACILITIES

6. To gain skill in developing unit and lesson plans, you may wish to refer to Module B–3, *Develop a Unit of Instruction*; and Module B–4, *Develop a Lesson Plan*.



To familiarize yourself with the scope, content, and format of courses of study in your service area, you may wish to contact your resource person or other experienced vocational teacher, the state department of education, or a local school administrator or supervisor, and ask to review courses of study, curriculum guides, or course outlines prepared for vocational courses or programs in your service area or occupational specialty.

The following items check your comprehension of the material in the information sheet, The Course of Study, pp. 6–15. Each of the five items requires a short essay-type response. Please respond fully, but briefly, and make sure you respond to all parts of each item.

SELF-CHECK

1. Explain the relationship of a course of study to a unit of instruction and a lesson plan.

2. Outline the major points that should be addressed in a comprehensive "course description."

3. Precise, measurable student performance objectives are usually not found in vocational courses of study. Explain the reasons for this.

4. Why are "time allocations" an essential component of any good course of study?

5. React to the statement, "There is common agreement among the various vocational services areas as to what constitutes a good course of study format."

NOTES

Compare your written responses on the Self-Check with the Model Answers given below. Your responses need not exactly duplicate the model responses; however, you should have covered the same **major** points.

MODEL ANSWERS

1. The course of study describes in **general** terms the objectives, subject matter, and resources necessary for an entire vocational course or program. As such, it is the foundation for the more detailed instructional planning a vocational teacher does when developing unit and lesson plans. A unit of instruction focuses on one topic or skill or section of subject matter listed in the course content portion of the course of study. The daily lesson plan focuses on one or more student performance objectives to be achieved during a particular unit of instruction.

   Thus, a written course of study or course outline might indicate that students are to develop human relations abilities. On the basis of that general guideline, a teacher would develop more detailed plans, in the form of unit and lesson plans, describing these abilities more specifically, and **how** (learning activities, evaluation procedures, etc.) these abilities will be developed during classroom or laboratory instruction.

2. The course description section of a course of study gives a general overview of the nature and goals of a course or program. It indicates—

   - **who** is to be taught (e.g., eleventh and twelfth grade students)
   - **what** they are to be taught (e.g., bookkeeping, general office skills, etc.)
   - what **degree of skills** is to be attained (e.g., entry-level)
   - **where** the training is to be used (e.g., an accounting firm)
   - general **employment conditions** (e.g., a one-secretary office versus a firm with a large typing/secretarial pool)

3. A vocational course of study or course outline is intended as a general guideline for teachers to help them as they plan specific learning activities for students, and for administrators to help them as they make decisions about the vocational program. It describes the **overall** abilities or competencies students completing a course or program will be expected to have.

   The course of study does not indicate to the teacher exactly how a particular topic or skill should be taught, or exactly how students' performance is to be measured. It is developed **before** the teacher has become familiar with the needs, interests, and abilities of his/her individual students, and before the specific standards of performance required by industry have been determined.

   Course of study objectives can and should indicate the general occupational standards of performance required. **Specific**, measurable student performance objectives are found in the teacher's unit and lesson plans. These plans describe **how** a particular teacher will teach a particular group of students a certain skill or piece of information, the **conditions** under which that learning will occur or a competency will be demonstrated, **how well** students will be expected to perform, what **evaluation procedures** will be used, etc.

4. It is important that vocational teachers, in making their detailed instructional plans for units and lessons, have a general idea of how much time should be spent on a particular area or topic. These suggested time allocations represent judgments (by the vocational teacher and others experienced in the occupation, curriculum specialists, etc.) about the relative **importance** of a particular topic in a course, as well as the average **amount of time** it should take to cover it. For example, the suggested time allocations in an accounting/computing course of study might indicate that more time should be spent on, and will be needed to cover, specific bookkeeping and accounting skills than on general office procedures such as filing and answering the telephone.

   These suggested time allocations do not, of course, take into consideration the unique needs of an individual group of students. Thus, they should be taken as general guidelines to help in developing unit and lesson plans, plans which should reflect the actual classroom and school situation as much as possible.

5. On the contrary, there is little agreement among the various vocational service areas as to what constitutes a good course of study format. Each service area has its own way of presenting instruction, and usually **organizes** the course of study **to reflect that structure** (e.g., a two- versus a four-year program; a program which focuses on the project method of instruction; or a program of cooperative education and related instruction). In addition, various service areas, school districts, and/or state departments will make decisions about **how much detail** is needed in a course of study, **what information should be supplied,** and what should be left to the planning of the individual vocational teacher or department.

   However, regardless of the degree of detail and the organization, most developers of courses of study agree that the document should outline the general **objectives**, **subject matter**, and **resources** of a course or program if it is to be useful to teachers and administrators as a planning guide.

LEVEL OF PERFORMANCE: Your completed Self-Check should have covered the same **major** points as the Model Answers. If you missed some points or have questions about any additional points you made, review the material in the information sheet, The Course of Study, pp. 6–15, or check with your resource person if necessary.

Learning Experience II

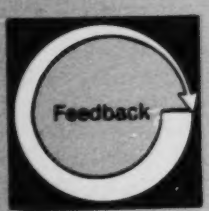
OVERVIEW

After completing the required reading, critique the performance of a hypothetical teacher in a given case study in developing a course of study.

You will be reading the information sheet, Procedures for Developing a Course of Study, pp. 22–39.

You may wish to locate and meet with a vocational teacher or curriculum specialist experienced in developing courses of study to review and discuss the procedures he or she has followed in developing them.

You will be reading the Case Study, pp. 40–41, and writing a critique of the performance of the teacher described.



You will be evaluating your competency in critiquing the teacher's performance in developing a course of study by comparing your completed critique with the Model Critique, pp. 43–44.

Activity

For information on the steps and procedures to be followed in developing the six components of a well-developed course of study, read the following information sheet:

PROCEDURES FOR DEVELOPING A COURSE OF STUDY

Examination of the components of a completed course of study does not show how it was developed, nor does it indicate the bases or data on which it was constructed. It is the **processes** used in the development of a course of study which are vitally important to its final usefulness and success in preparing students for the occupation.

If the developers use faulty or careless procedures in the production of the document, the final product might have all the appearances of a good course of study, and yet be worse than useless. If, for example, the subject matter content is based on intuitive hunches or personal preference, rather than verified procedures, students and teacher may waste valuable time teaching and learning the wrong skills.

This does not mean, of course, that there is only one possible method of developing a course of study, nor does it imply that curriculum developers know all the answers to the complex questions of what students should learn, and how teachers should instruct. However, enough is known to provide a basis for developing an effective course of study on which to base your instruction.

Most curriculum developers would organize the work of developing a course of study for vocational education into eight major tasks. Each of these may involve several sub-tasks, and some would include input from outside sources. The sequence of tasks (the steps) in developing a course of study are shown in Figure 2. Each of these steps will be discussed in the section that follows.

Prepare a Course Description

Because the course description indicates the **basic goals** and **purposes** of the course, it must be the first component of the course of study to be developed and decided on. It is not to be applied as ornament to a vocational course that already exists. The purposes of a course evolve out of the goals of the entire school, the goals of the total vocational program, and the goals of the service area.[7] In preparing your course description, you need to examine existing statements of the goals and objectives of the total educational program, the total vocational program, and your service area to help determine the basic purpose of your course and ensure that it reflects (is consistent with) these broad goals and objectives.

For example, the school and the total vocational program may have as a major goal that of providing opportunity for students of all abilities to prepare for employment in the community. The vocational agriculture program may provide for student and community needs in agricultural occupations; the purpose of the course in lawn care may be to provide students of moderate abilities the opportunity to find useful employment in an occupation of growing demand. If it is difficult to specify and clarify the goals and purposes of the course, there may be some serious question as to the value of the course itself.

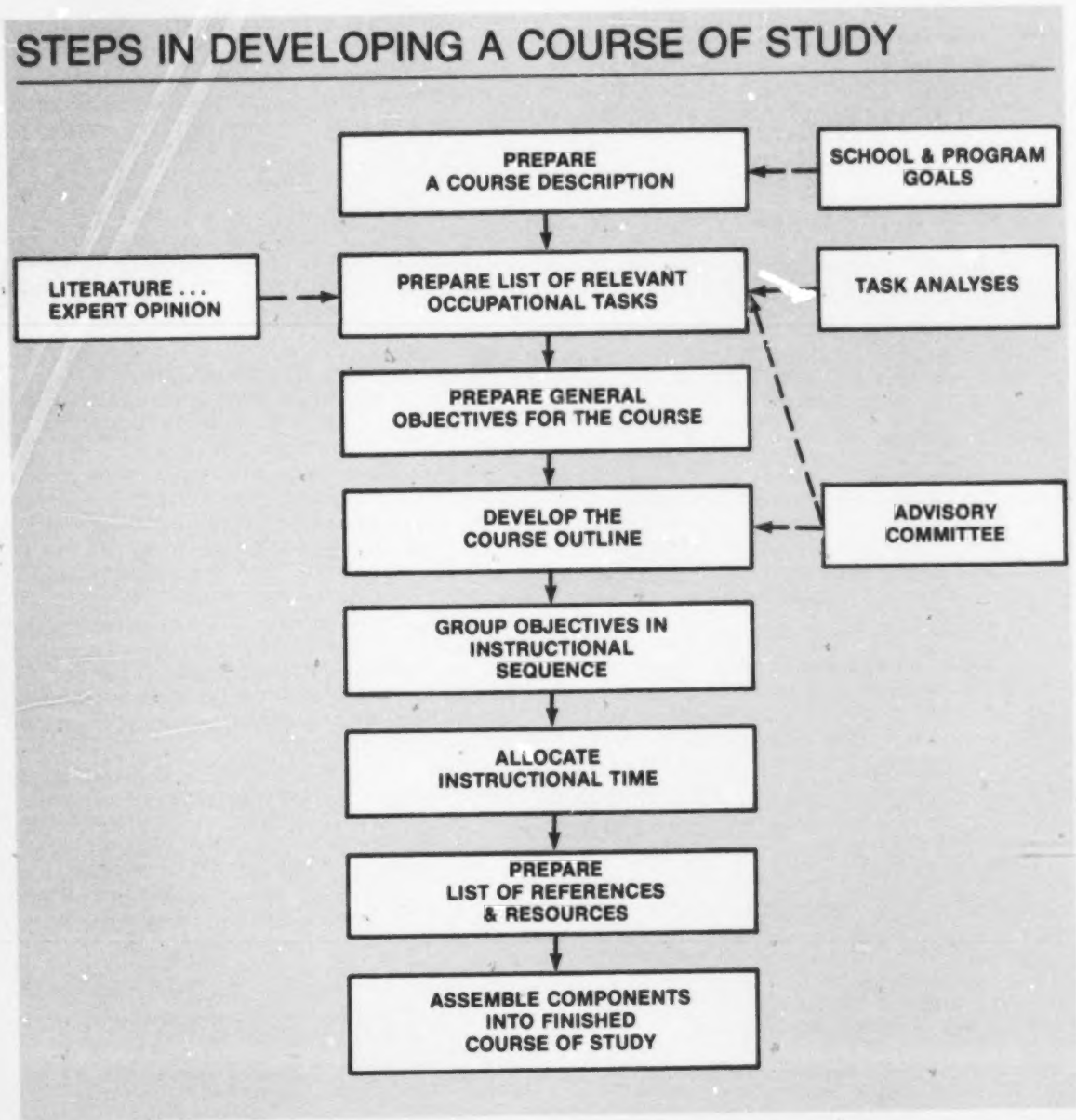
Once you have stated the broad goals, you are ready to address the five elements of the course description: who is to be taught, what they are to be taught, what degree of skill is to be attained, where training will be used, and what the general employment conditions will be.

7. To gain skill in developing vocational program goals and objectives at these levels, you may wish to refer to Module A–6, *Develop Program Goals and Objectives.*

Keep in mind that these decisions will at this point be broad and general. You can say that the course is designed to train students who are juniors of moderate ability (**who**) in the entry-level skills (**degree of skill**) needed to gain employment as cook's assistants at fast-food service operations (**where**). You can say that employment opportunities in this area are numerous; that, locally, further on-the-job training is provided; and that employee benefits are adequate (**conditions**). And, you can broadly describe the final element (**what is to be taught**) by saying that students will be taught skills in applying for a job, preparing and serving food, stocking food, ensuring safe conditions, etc.

However, until you have actually completed all the steps involved in developing your course of study, you cannot be more specific. The course description should be broadly stated, designed to provide a framework and a guide for the further development of the course of study.

FIGURE 2


STEPS IN DEVELOPING A COURSE OF STUDY
PREPARE A COURSE DESCRIPTION
SCHOOL & PROGRAM GOALS
LITERATURE . . . EXPERT OPINION
PREPARE LIST OF RELEVANT OCCUPATIONAL TASKS
TASK ANALYSES
PREPARE GENERAL OBJECTIVES FOR THE COURSE
DEVELOP THE COURSE OUTLINE
ADVISORY COMMITTEE
GROUP OBJECTIVES IN INSTRUCTIONAL SEQUENCE
ALLOCATE INSTRUCTIONAL TIME
PREPARE LIST OF REFERENCES & RESOURCES
ASSEMBLE COMPONENTS INTO FINISHED COURSE OF STUDY

A teacher developing a course of study may find that a course description already exists and needs simply to be reviewed and brought up to date in light of current student interests and needs, and occupational requirements. The vocational program advisory committee may also be used to help the teacher clarify the goals and purposes of a specific course.

Prepare List of Relevant Occupational Tasks

Identifying exactly **what** is to be taught is the purpose of this second step in the procedures for developing a course of study. Quite obviously, this step is critical, not only to the success of the document, but to the value of the whole occupational program. An error in thinking at this stage of the process can lead to a program from which students leave ill-prepared to enter their chosen occupations. In recent years, techniques for identifying relevant occupational tasks have been given increased attention, which should improve the effectiveness of vocational programs.

Occupational Analyses

Task lists for a specific vocational program can be derived from an occupational analysis for the particular occupation. An occupational analysis involves gathering data from workers and supervisors in a given occupation, and results in a lengthy and **detailed list** of the **tasks performed** on the job by these workers.

Your school system may have conducted an occupational analysis as part of the preparation for installing the new vocational education program, or the state department of vocational education may have furnished an occupational analysis to your school for curriculum development purposes. If an analysis is already available, it should be used as the basis for identifying occupational tasks.

If an analysis is not already available, there are several ways that one may be acquired.

- It is possible for the vocational teacher or school to conduct an occupational analysis. This is a lengthy and complex process.[8]
- You may locate sources of occupational analyses through your bureau or division of vocational education at the state department of education.
- The Center for Vocational Education has available three directories of task inventories, covering 600–700 occupations, which you can consult.[9]

From the occupational analysis, you must select those tasks which describe not only the occupation specified in the course description, but also the occupational level. Tasks performed by an entry-level auto mechanic, for example, will very likely differ from those performed by a journeyman auto mechanic.

As you examine the occupational analysis and attempt to identify the tasks appropriate to your course, you should apply three questions to each task you consider.

- Is the task actually **performed** by the level of worker you are going to train? The worker must be competent in those tasks basic to the level at which he/she wishes to enter, and the training must be such that students can immediately apply the competencies on the job.
- Is the task **critical** to the job success of this level of worker? If tasks are identified which can make a difference between job success and job failure, and students are taught to perform these tasks, they can optimize their job performance.
- Is it **feasible** for the school to provide instruction in the task? Some tasks can be learned readily in a formal educational setting. Competency in other tasks, because of their nature, can be developed only on the job. If an occupational competency does not lend itself to formal in-school training, then it should not be included in the course outline.

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8. To gain skill in conducting such an analysis, you may wish to refer to Module A–7, *Conduct an Occupational Analysis*.

9. *The Directory of Task Inventories* (Columbus, OH: The Center for Vocational Education, The Ohio State University, Vol. I—1974, Vol. II—1975, Vol. III—1976).

Once the tasks of the desired occupational level have been identified, they should be placed in a list similar to that shown in Sample 5. The tasks can be grouped according to duties, or they can be left in a random order at this point. Though such task listings should be prepared with care, you should remember that since preparing a course of study is a developmental process, changes can be made in the results at any time.

SAMPLE 5

OCCUPATIONAL TASK LIST

Grocery Store Cashier-Checker[10]

1. Manipulate cash register keys
2. Determine unit price of multiple-priced items
3. Process cash refunds
4. Write customer's charges
5. Ring up orders of merchandise on cash register
6. Calculate sales tax
7. Change cash register receipt tape
8. Refer customer's complaints to proper store authority
9. Change prices on pre-stocked merchandise
10. Identify acceptable checks
11. Issue trading stamps
12. Fill out a cash register daily balance form
13. Correct cash register errors
14. Stock merchandise in racks and on shelves
15. Record customer's requests for merchandise
16. Accept consumer coupons
17. Check out Federal Food Stamp purchases
18. Price-mark merchandise
19. Prepare cash drawer for daily business
20. Adjust customer's complaints
21. Prepare check-out area for business
22. Bag customer's orders of merchandise
23. Accept and record customer's accounts receivable
24. Weigh, price-mark, and bag produce
25. Answer customer's inquiries
26. Process bottle refunds
27. Make change

10. Taken From *A Catalog of Performance Objectives, Criterion-Referenced Measures, and Performance Guides for Grocery Store Cashier-Checker* (Lexington, KY: University of Kentucky, The Curriculum Development Center for Kentucky, 1975). Copyright by the Vocational-Technical Education Consortium of States (V-TECS); 33 catalogues of objectives are available from this consortium to persons in the 16 member states.

Other Methods

Using the results of an occupational analysis is not the only way to identify the skills to be taught in a vocational program. In fact, the scientifically derived analysis, employing random samples of incumbent workers and sophisticated data processing techniques, is a relatively recent development. Traditionally, other methods of identifying occupational tasks have utilized **expert opinion** in some form.

One source of expert opinion is found in previously developed **courses of study** and **curriculum guides**. These may be available to you from your

own school, from your state department of education, from vocational curriculum laboratories, or through the National Network for Curriculum Coordination in Vocational and Technical Education—NNCCVTE (a network of six regional centers funded by the U. S. Office of Education to facilitate the uniform sharing of curriculum materials on a nationwide basis).

Courses of study and curriculum guides developed by others may be of great value to you in identifying the tasks or topics of instruction that professional workers in your occupational area deem to be important. These documents may also include desirable related instruction topics, and material that may be useful to you as you construct other components of the course of study. There are two cautions that you need to keep in mind as you review courses of study for possible adaptation to your own program.

- The goals and aims of your program, and those on which the course of study is based, may be somewhat **different**. These differences must be carefully taken into account, and the occupational tasks selected accordingly.
- Any curriculum guide or outline may not be completely **current**. In a fast-moving technological world, it is difficult to find printed materials that are up to date, so the teacher using such material will need to review and update the information carefully.

There are other sources of information that can be used as resources for identifying occupational tasks. Current **textbooks**, **reference books**, and **manuals** in the occupational area are often organized around tasks. **Technical periodical literature** (magazines, journals, pamphlets) often describes new jobs and operations. **Government documents** may be a rich source of occupational task lists or descriptions of new skills being used in the field. These kinds of sources can be used individually, or they can be used as a check against each other to make sure the final task list or topic list is as complete and up to date as possible.

Verify Tasks and Topics

Whether the course content is generated from textbooks and other reference documents, expert opinion, or task analyses, it is important that you proceed to verify the task and topic list to ensure that it is appropriate to your specific program and local needs. One of the best and most convenient ways of doing this is to involve your **advisory committee** in reviewing the list and suggesting improvements.

The advisory committee should examine each task or topic separately, decide whether it is actually performed by workers in your local area, and determine whether the task is critical to the job success of the worker. The participation of the advisory committee in helping select and verify the validity of course content will not only strengthen the instructional program, but will encourage their future support of the program.

Cluster and Sequence the Topics

After you have developed the lists of tasks and topics, you are ready to organize the tasks into a logical learning sequence. First, the tasks need to be grouped or "clustered" for instructional purposes. A **cluster**, in this sense, is a group of tasks or related topics that should be taught together. A particular lesson or a unit of instruction may cover just one occupational task, or several. There must be some rationale for the cluster or some relationship among the tasks. The rationale may be based on instructional efficiency, educational logic, limitations of equipment, size of task, etc.

The tasks, or clusters of tasks, then need to be placed in a **sequence**, or order, to form the complete instructional program. The sequence must be constructed so as to make educational sense and maintain student motivation. There is no simple formula or set of rules that can be applied to developing the sequence. The teacher will need to draw on his or her professional training and occupational experience, and may have to enlist the aid of consultants or members of the advisory commit-

tee to decide at just what point in the program the student must accomplish each of the tasks. The following guidelines should be considered in the clustering and sequencing process.

- Develop the sequence of tasks and topics by using the nature of the content as a guide. Progress from simple notions to complex principles, from basic tasks to those requiring a high level of skill. Analyze the chain of needed skills (competencies) to determine which skills must be learned before others can be attempted. An illustration of a sequential chain of competencies is shown in Figure 3.
- Consider the location of experiences and the resources required for various tasks. Some topics relate to subject matter knowledge that may be completed in the classroom; others require special laboratory facilities or unusual amounts of time. Still other tasks may require work on a job site. Availability of laboratory and field settings may determine the order in which experiences may occur.
- The ways in which students learn (the psychology of learning) suggest another consideration in sequencing and clustering tasks or topics. Consider student interests, concerns, and motivations. Vary the tasks so that highly motivating tasks will be interspersed among more routine ones.
- Consider the instructional and learning efficiency of grouping tasks. Tasks that have knowledge and skill relationships, which can be readily learned together or are convenient to teach simultaneously, may be combined to form larger topics.

A sequence of tasks for the grocery store cashier-checker is shown in Sample 6. The tasks are clustered, and are in the order in which they will appear in the final course outline and the order in which they will be taught. Each cluster has been summarized by a topic heading. The left-hand column presents the major topics (clusters); the right column shows the tasks that comprise the topics.

Prepare General Objectives for the Course

The third major step in the course of study development process is the specification of overall course objectives. There is little agreement as to the form that course of study objectives should take. Some educators feel that course of study objectives should indicate only the **broad purposes or goals** of the course (e.g., To develop competencies needed by students engaged in or preparing to engage in horticultural occupations). These educators feel that specific (and appropriate) student performance objectives can be developed only after the teacher knows the specific abilities, interests, and needs of his/her students and the amount of time that can be devoted to the particular topic of concern.

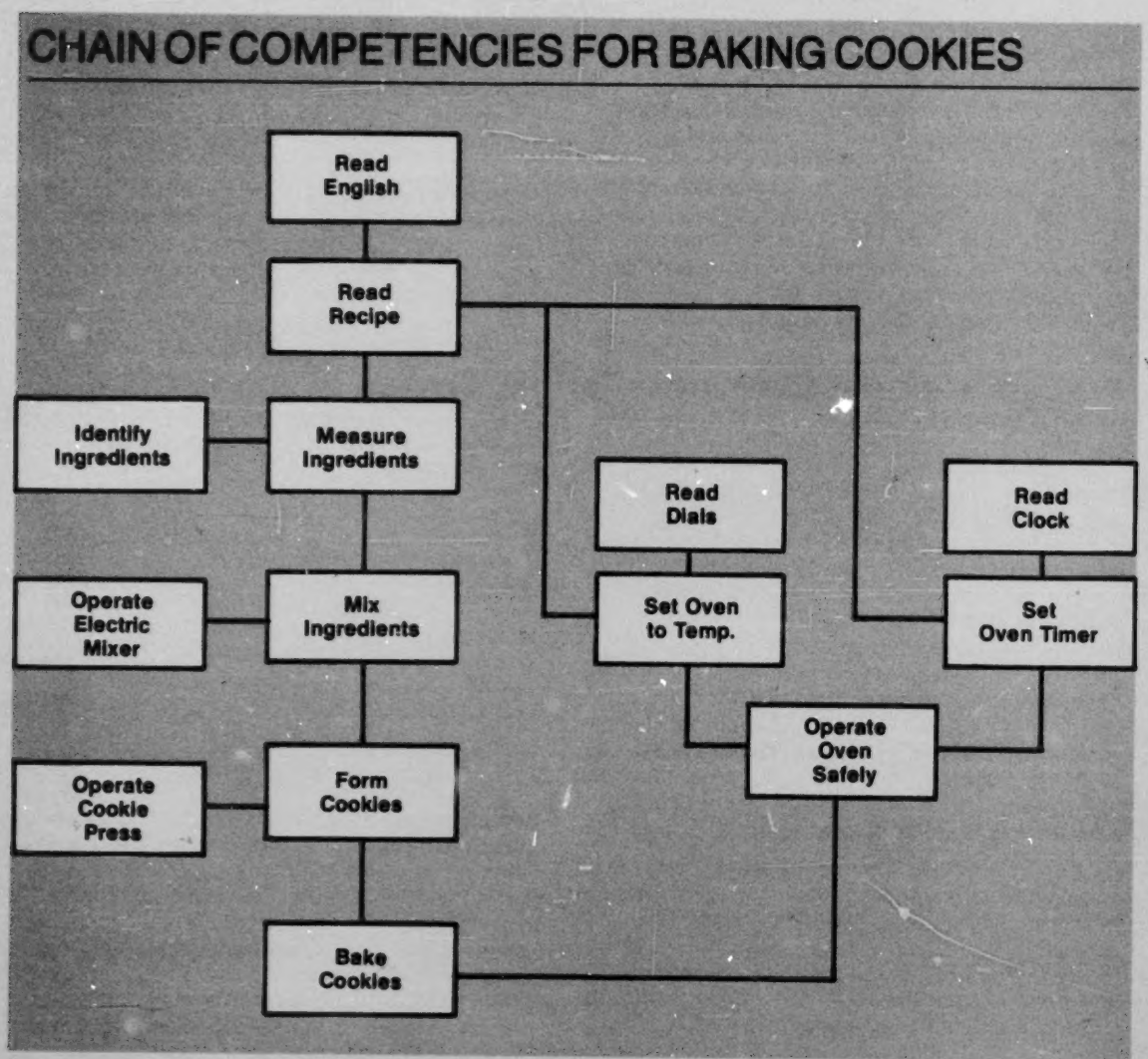
Others feel that course of study objectives should be very **specific**, stated in performance terms, measurable, and with the conditions described (e.g., Given previous classroom and laboratory instruction, the student will be able to list and demonstrate the ten steps necessary in designing a corsage, wedding bouquet, and centerpiece).

The best approach is probably between the two extremes. A course of study should indicate in a **general** way what the student will be expected to do after completing the course. This means, then, that student performance objectives which specify the terminal behaviors, conditions, and specific criteria of acceptable performance should be developed as part of the lesson planning process rather than as part of a course of study. This is **not**

to say, however, that the general objectives contained in a course of study cannot or should not specify anything with regard to the **general occupational standards** of performance expected by industry. Identifying these general occupational standards can make your course objectives more useful bases for planning units and lessons.

How, then, should the course of study objectives be developed? Once the important topics that will constitute the course content have been determined, the topics clustered and finally sequenced, you are ready to look at the major areas of instruction that your course will deal with.

FIGURE 3



SAMPLE 6

COURSE TOPICS

GROCERY STORE CASHIER-CHECKER	
Topic	**Task Clusters**
Operating the cash register	Manipulate cash register keys Correct cash register errors Change cash register tape
Calculating unit price of multiple-priced items	Determine unit price of multiple-priced items
Calculating sales tax	Calculate sales tax
Checking out loose produce	Weigh, price-mark, and bag produce
Handling refunds	Process cash refunds Process bottle refunds
Handling trading stamps and coupons	Accept consumer coupons Issue trading stamps
Accepting customers' payments	Identify acceptable checks Make change
Handling charge accounts	Write customer's charges Accept and record customer's accounts receivable
Preparing for work	Prepare check-out area for business Prepare cash drawer for daily business
Checking out customers	Ring up orders of merchandise on cash register Check out Federal Food Stamp purchases

Topic	Task Clusters
Closing out the cash register	Fill out a cash register daily balance form
Bagging orders of merchandise	Bag customer's orders of merchandise
Maintaining good customer relations	Answer customer's inquiries Adjust customer's complaints Refer customer's complaints to proper store authority Record customer's requests for merchandise
Stocking merchandise	Price-mark merchandise Stock merchandise in racks and on shelves Change prices on pre-stocked merchandise

In an automotive mechanics course of study, for example, a major instructional area might well be that of "maintaining and repairing fuel systems." Such an instructional area might be concerned with 20 or more job tasks that may have been derived from an occupational analysis survey, as illustrated in Sample 7.

While specific student performance objectives for a lesson plan might be developed for each of these occupational tasks, they are too narrow for the development of either unit or course of study objectives. Note that several of the tasks listed in Sample 7 deal with carburetors (tasks 1, 5, 7, 8, 10, and 22) and two of the tasks involve emission control systems (tasks 13 and 23). In this situation, the related tasks probably should be consolidated and their respective steps or activities integrated. If this type of action is decided upon, one or more general objectives should be prepared for the total group. Such a consolidated listing and course objective are shown in Sample 8.

While the course objective stated in Sample 8 indicates what the student should be able to do, nothing is said about the occupational standards of performance expected. A more useful (in terms of instructional planning) course of study objective would read as follows: *The student will be able to maintain and repair automotive fuel systems in accordance with the specifications contained in the manufacturer's service manuals.* Another way of stating the objective would be as follows: *Given an automobile on which the defects in the fuel system have been identified, the student will be able to replace, reassemble when necessary, install, and adjust any part of the fuel system according to the manufacturer's specifications.*

Because the standards of occupational performance expected by local industry are seldom contained in occupational analyses, core courses of study, or curriculum guides, it is recommended that the criteria and/or standards for the course objectives be established with the aid of an occupational advisory committee knowledgeable about, and experienced in, the occupation(s) involved. On the basis of your experiences, you might suggest standards or criteria for each objective which could then be reviewed by members of the advisory committee in order to answer the following questions about each objective.

- Is the performance correctly stated?
- Are the standards realistic and acceptable?

If standards are provided as part of an occupational analysis, these should be considered. However, these too should be verified by the advisory committee.

SAMPLE 7

JOB TASKS[11]

Automotive Mechanics
Instructional Area: Maintaining and Repairing Fuel Systems

1. Adjust carburetor
2. Adjust governors
3. Analyze for moisture or foreign particle level in fuel
4. Analyze fuel injection problems by means of electrical diagnostic equipment
5. Clean carburetor
6. Clean or replace fuel filter units
7. Inspect, clean, and adjust choke unit (automatic and manual)
8. Inspect, service, or replace carburetor air cleaner
9. Inspect, service, or replace gas tank, cap, and sending unit
10. Install carburetors
11. Measure fuel flow and pressure
12. Perform operational checks of governors
13. Perform operational inspections of exhaust emission control systems
14. Perform operational inspections of fuel systems
15. Remove, service, or replace fuel pumps
16. Repair governors
17. Repair or replace electrical fuel injection computer
18. Repair or replace fuel injectors
19. Repair or replace fuel injector pumps
20. Repair or replace fuel lines and hoses
21. Repair or replace wiring harness for electronic fuel injection system
22. Repair or service carburetors
23. Repair or service exhaust emission control systems
24. Service or replace manifold heat controls
25. Service or replace units in vacuum systems

11. Sidney D. Borcher and Paul B. Leiter, *Automotive Mechanics Occupational Performance Survey*, Interim Report (Columbus, OH: The Center for Vocational Education, The Ohio State University, 1973), p. 45.

Develop Course Outline/Sequence Objectives

Once you have developed one or more course objectives for each of the instructional areas identified in the "clustering and sequencing of topics" phase of the course of study development process, you will have completed the development of course objectives phase.

The course of study objectives should then be developed into a **course outline**. In this outline, the objectives should be written in a uniform manner, contain some indication of the occupational standards involved, and be **sequenced** in the most logical order. Normally, if a good job of clustering and sequencing the topics in the previous phase was done, and only one general objective is written for each instructional area, the sequencing will be **automatic.**

SAMPLE 8

CONSOLIDATED LISTING AND OBJECTIVE[12]

Automotive Mechanics
Instructional Area: Maintaining and Repairing Fuel Systems

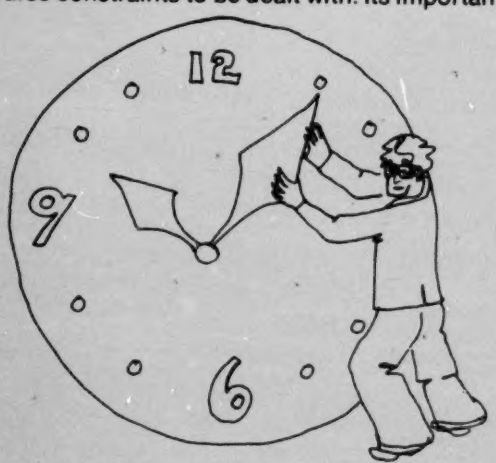
1. Clean or replace fuel filter units
2. Determine quality and flow of fuel
3. Inspect, service, or replace gas tank, cap, sending unit, and lines
4. Maintain and repair carburetors
5. Remove, service, or replace fuel pumps
6. Repair, replace, or service fuel injection system components
7. Repair or service exhaust emission control system
8. Service or replace units in vacuum systems

Course Objective: The student will be able to maintain and repair automotive fuel systems.

12. Adapted from Borcher and Leiter, *Automotive Mechanics Occupational Performance Survey*, p. 45.

Allocate Instructional Time

Another of the important steps in the process of developing a course of study involves indicating the amount of instructional time which should be devoted to each topic or unit of instruction. This is very important, as time is usually one of the major course constraints to be dealt with. Its importance



can be readily perceived when you consider the number and scope of the learning experiences with which students must be provided within the time available.

Ideally, your prime consideration should be the instructional needs and career goals of each of your students, and time should not be a factor. The student should receive the amount of training needed irrespective of time. Given a number of well-constructed course outlines which form a program, you should be able to determine how many hours are required for each unit. The total **unit hours** needed for each course should be the deciding factor in determining how long each course should be. The total **course hours** needed should be the deciding factor in determining how long the program should be.

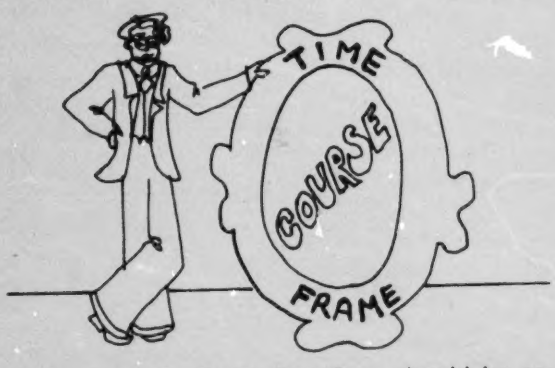
However, schooling at present is time-based, and you will have to adjust your plans to meet this reality. If time will not allow you to cover all the topics you have outlined, there are two alternatives. One is to **alter** the characteristics of **the "who"** in the course description (e.g., require students to possess skills in more of the specific tasks when they enter the course). This is not often practical, however, since it may mean crowding too much content into a prerequisite course or developing a whole new course to fill the gap. The other alternative is to **reduce the length** of the course by (1) eliminating some objectives, (2) reducing the standards to be attained, or (3) some combination of the two.

If the second alternative is to be implemented, care should be taken to ensure that the tasks and topics which are absolutely necessary to provide the students with the entry-level skills they need are not eliminated. Students entering the course

should not be started on tasks they cannot handle. Students completing the course should be adequately prepared for the next course in the sequence or for placement on the job.

Furthermore, **standards** of performance should be reduced only if they are not reduced below the performance level required for on-the-job success. If students still require a great deal of on-the-job training when they start seeking employment, their chances of being hired for the job of their choice may be greatly reduced.

To determine if your course outline is realistic in terms of the time available, you should first determine the **time frame** established for the course: a semester, a quarter, number of class sessions, number of hours, etc. Such limits are usually established by administrative or supervisory personnel.



Next, specific **time allocations** should be assigned to each topic. In the course of study, this could be done by assigning times to the instructional **areas** and/or **units**. Examples of how time is assigned on the basis of instructional areas are shown in Samples 2 and 9. It is easier to determine if the assigned times are realistic, however, if you assign times for both the instructional areas and the units within each area. Examples of this type of time allocation are shown in Samples 3 and 10. Notice that in Samples 9 and 10, the time is specified in instructional **hours**. This is recommended since it is a more precise measure than other commonly used measures such as semesters or quarters.

In assigning instructional time to the various topical areas, start by using your own judgment. Your experiences should be supplemented by referring to other relevant courses of study, curriculum guides, instructional units, or similar curriculum materials in an effort to determine the beliefs of others concerning the instructional time necessary for specific topics.

The assigned times should then be **reviewed** by an **advisory committee** composed of persons knowledgeable about and experienced in the occupation(s) involved. During their review, these persons should indicate whether they feel the assigned times are **realistic**.

Once you know exactly how many hours you have available for your course and have estimated the number of hours required for the instructional areas and/or units in your course outline, you can then determine if your course outline is realistic. If not, you will have to make the necessary adjustments.

The assignment of instructional time should be recognized as a rather difficult task, especially for the beginning teacher. At best, these assigned times should be considered as guides, with the actual instructional time varying according to the specific characteristics of the students and the facilities. However, you should still try to make assigned times as realistic as possible if you are to accomplish all your objectives.

Even when an instructional program is operating on a completely individualized concept, times should be specified. These times can then be used by both the teacher and the students in evaluating student progress and in planning future educational experiences.

SAMPLE 9

TIME ALLOCATIONS: INSTRUCTIONAL AREAS

Course: Carpentry

Instructional Areas	Hours		Totals
	First Year	Second Year	
1. Orientation	15	15	30
2. Care and Use of Tools	60	25	85
3. Forms and Foundations	120	30	150
4. Wall and Floor Framing	200	25	225
5. Roof Framing	120	15	135
6. Cornice and Exterior Trim		100	100
7. Roofing		30	30
8. Interior Trim		125	125
9. Cabinet Work		85	85
10. Stair Construction		50	50
11. Review and Evaluation	25	40	65
Totals	540	540	1080

SAMPLE 10

TIME ALLOCATIONS: AREAS AND UNITS[13]

Course: Beauty Culture I	Hours	Total Hours
Instructional Area 1: The Shop and the Cosmetologist		59
Unit 1.1: Professional Projection	37	
Unit 1.2: Hygiene and Good Grooming	4	
Unit 1.3: Anatomy and Physiology	15	
Unit 1.4: The Beauty Salon or School	3	
Instructional Area 2: Sterilization Practices in the Beauty Salon		16
Unit 2.1: Bacteriology	4	
Unit 2.2: Sterilization	12	
Instructional Area 3: Scalp and Hair Applications and Shampooing		29
Unit 3.1: Shampooing	10	
Unit 3.2: The Skin	10	
Unit 3.3: The Scalp	4	
Unit 3.4: The Hair	3	
Unit 3.5: Chemistry	2	
Instructional Area 4: Hairstyling		93
Unit 4.1: Introduction to Hairstyling	7	
Unit 4.2: Fingerwaving	17	
Unit 4.3: Maypole Curl	9	
Unit 4.4: Pin Curl	11	
Unit 4.5: Sculpture Curl	24	
Unit 4.6: Roller Curl	20	
Unit 4.7: Cascade Curl	5	
Instructional Area 5: Manicuring		46
Unit 5.1: The Nail	4	
Unit 5.2: Bones and Nerves of the Arm and Hand	2	
Unit 5.3: Muscles of the Hand, Arm, and Shoulders	1	
Unit 5.4: Blood Supply of the Arm and Hand	2	
Unit 5.5: The Plain Manicure	37	
Instructional Area 6: Hair Pressing and Iron Curling		27
Unit 6.1: Introduction		
Unit 6.2: Hair Pressing		
Unit 6.3: Iron Curling		
TOTAL HOURS		270

13. Adapted from Dorothy S. Mankiw and Michael A. Elefante, *Beauty Culture I: Teacher's Guide* (New Brunswick, NJ: Rutgers—The State University, Vocational-Technical Curriculum Laboratory, 1973), p. 5.

Prepare List of References and Resources

The next step in the development process, identifying the materials needed to support your course of study, involves considerable judgment. You will need to make decisions at this point concerning the references, audiovisual materials, equipment, tools, and facilities which will be needed to conduct the course you have outlined. However, the list you prepare will not be a detailed list of every single item you will need to present each lesson or unit; only **selected references** and **resources** should be included in the course of study.

For example, although a particular lesson in a course may require a quantity of specific references and resources (e.g., 1 handout, 3 supplementary references, 1 film, 4 models, and 10 transparencies), these will not be listed in the course of study. For the course of study, you need to identify **major items** such as a basic textbook, student workbooks, a series of 8 mm film loops, a piece of equipment, or a set of tools—items which would aid in the achievement of the broad objectives contained in your course of study.[14]

References and Audiovisual Materials

Printed references and audiovisual aids which might be considered for inclusion in your course of study can be located through a number of sources. By reviewing core courses of study and curriculum guides produced by state departments of education, curriculum laboratories, and teacher education departments, you can locate a number of recommended materials.

Recent publishers' catalogues are another source of ideas for both references and audiovisual materials. In addition, *Resources in Vocational Education* (RIVE), a bi-monthly publication produced by The Center for Vocational Education, can provide you with indexes to, and summaries (abstracts) of, a variety of instructional and research material intended primarily for teacher or student use.

A primary consideration in selecting any material is whether it could help in the achievement of your course objectives. In addition, however, you need to measure each tentative item against a number of other criteria.

- All materials must be designed for the level of students for whom your course is designed.
- Written materials need to be appropriate for the general reading level of the students for whom your course is designed.
- Materials should contain no racial or sexual stereotyping.
- Materials should be realistic, accurate, and up to date.
- Materials should be motivational.
- Materials should be of high quality.
- Materials should be still available for purchase.
- Audiovisual materials should be appropriate for the equipment and facilities you have or will have available.

Once you have tentatively selected and evaluated potential materials, you could ask your advisory committee to review your list and suggest additions or deletions.

Facilities, Equipment, and Tools

Your own occupational experience and professional training and experience (and that of your fellow vocational teachers) will be of considerable help to you in specifying the facilities, equipment, and tools needed for your course of study. In addition, persons from business and industry and members of your advisory committee can be of much help in this area and should be consulted.

Equipment and tools can also be located through suppliers' catalogues, textbooks or other references, and core courses of study or curriculum guides. Specifications for facility needs can be located by checking facilities guides produced by the state department of education, curriculum guides, available references on facility planning, or by consulting with state supervisors,

14. To gain further skill in determining what references and resources are needed to support your course of study, you may wish to refer to Module E-1, *Project Instructional Resource Needs*.

teacher educators, and others experienced in planning facilities.

Ideally, you should specify the basic tools, equipment, and facilities needed for your instructional needs. However, tools are expensive, equipment is more expensive, and facilities more expensive still. Available facilities may also be predetermined. Thus, you need to determine what your limitations are in terms of available funds and facilities, and then specify your needs for tools, equipment, and facilities accordingly.

Whatever needs you specify in this area, you should make sure the following criteria are met.

- Tools, equipment, and facilities should all reflect actual conditions in business and industry.
- Tools, equipment, and facilities should be of high quality.
- Tools and equipment should include all items necessary for students to perform the various job tasks needed to meet the objectives specified in the course of study.
- Tools and equipment should have built-in safety features.

Assemble the Course of Study into an Acceptable Format

The final step in developing a course of study is to assemble all its components into an acceptable, easy to read and understand format. A review of existing courses of study will reveal that there is no **one** acceptable format; the format you use should be the one best designed to meet your immediate needs. An example of one workable format is shown in Sample 11.

When the components have been placed into an acceptable format, the course of study can be considered finalized. It should then be distributed to appropriate individuals and used as a guide for the further preparation of instructional materials and for providing educational experiences to students.

Though the course of study serves as an operating plan for the instructional program, it should be considered as a suggested, not an absolute, guide. As the course of study is used in planning and implementing your more specific units and lessons, you should note weaknesses or needed additions so that the course of study can be modified where necessary.

Once you have completed the process of developing a course of study, you need to submit the completed course of study to both your advisory committee and to your administration for suggestions and final approval.

SAMPLE 11

FORMAT FOR COURSE OF STUDY

Course Title: _____

I. Course Description

II. Course Objectives

1. 2. 3. – – –

III. Course Content

Major Instructional Areas
1. Orientation and Guidance
2. _____
3. _____
4. _____
5. _____

IV. Time Allocations*

Instructional Areas/Units	**Time Allocations by Class Hours**
1. Orientation and Guidance	
a. Types of job opportunities available in community	4
b. _____	-
c. _____	-

*This section may also have the time allocations broken down year by year: Freshman Level, Sophomore Level, Junior Level, Senior Level.

V. Selected References and Audiovisual Materials

Books

1.
2.
–

Periodicals

1.
2.
–

Films

1.
2.
–

Filmstrips/Slides

1.
2.
–

VI. Tools, Equipment, Supplies, and Facilities

Tools

1.
–

Equipment

1.
–

Supplies

1.
–

Facility Requirements

Classroom:

Laboratory:

Storage:

Course of Study Prepared by: _____

Date Prepared: _____

Date Reviewed by Advisory Committee: _____

You may wish to arrange through your resource person to meet with a vocational teacher or curriculum specialist to review and discuss the procedures they followed in developing a course of study. At this meeting, you could discuss such matters as—

- the method(s) they used to identify tasks or topics
- the degree of specificity of the course objectives they developed
- how they determined realistic time allocations
- the criteria they used for selecting resources
- the format they chose to use to organize the course of study components

The following Case Study describes how a vocational teacher named Mr. Liberty went about developing a course of study. Read the situation described, and **critique in writing** (1) the procedures he used to develop the course of study, and (2) the content of the document he prepared.

CASE STUDY

Mr. Liberty was on his way to a meeting of the vocational teachers in the school district, called by the new district vocational supervisor, Mr. Bell. Rumor had it that Mr. Bell had called the meeting because he was dissatisfied with the way the total vocational program was running.

However, as an experienced second year teacher, Mr. Liberty found that hard to believe. He himself had detailed daily lesson plans worked out which structured his whole program, which he adhered to strictly, and he assumed the other teachers in the district had the same. If there was a problem with the vocational program, it was with the quality of the students he was sent and expected to train.

Mr. Bell began the meeting by introducing himself, and then explaining the source of his dissatisfaction. According to Mr. Bell, it all started when he received several complaints from students and parents concerning three problem areas: (1) some students reported they were having to study the same material in different classes; (2) others felt they hadn't been adequately prepared for their senior-level classes at the junior level; and (3) some parents complained that their sons and daughters were having difficulty obtaining, and functioning in, the jobs for which they had supposedly been trained.

Mr. Bell noted that he had been provided with district curriculum guides for the various vocational programs when he accepted his position. Although the material in these guides needed to be updated, he felt that using them **should have** resulted in an effective, coordinated program.

However, in his contacts with the teachers in the district, Mr. Bell had discovered that few vocational teachers were even aware that these guides existed. Mr. Bell indicated that the purpose of this meeting, therefore, was to correct this situation by developing an updated curriculum or course of study covering each of the programs in the various service areas.

He then explained what a course of study was, the components it should contain, and the format it should follow. Copies of a sample format were handed out to each teacher. He requested that each teacher contribute to the total course of study by preparing courses of study for each course or program he/she taught.

Mr. Liberty left the meeting annoyed. As far as he was concerned, his courses **were** coordinated. It was the kids who couldn't or wouldn't take advantage of his good efforts and hard work, but he figured it couldn't hurt to please the new supervisor. Besides, although it would take him awhile to pull it all together, it was little more than busywork involving compiling all his detailed lesson plans for the four courses he was teaching.

It was lucky he had done those plans. When he first came to the district, he'd had nothing to go on but the students' texts, workbooks, and manuals,

and existing equipment and supplies. Following these closely, he'o managed to develop some pretty solid lesson plans.

During the next few days, he pulled together all his materials and settled down to the task at hand. First, he listed the topics for each of the lessons for each of the courses, in the sequence in which they were taught. Then he listed the time allocations for each topic.

Looking these over, he was once again exasperated at the slowness of his students—how no amount of prodding seemed to get them to finish the necessary activities in the time he'd allotted. Maybe this course of study business wasn't such a bad idea after all. When he turned it in, he could try convincing his supervisor that a better quality of student should be enrolled in his courses.

Then he copied all the student performance objectives for all the lesson plans for each course, again in sequence. After listing these objectives, he looked them over, especially the criteria, noting with satisfaction what high standards he had insisted on. It was too bad so few of his students were able to meet what **he** considered to be minimal standards of excellence. He put it aside at that point (having used up half a pack of typing paper) until the next day.

The next day, he reluctantly went through all the lesson plans again, listing all the resources needed for each lesson, including references, tools, equipment, supplies, facilities, etc.

Now came the easy part, preparing the course description. Also, this section gave him another chance to describe the type of student he wanted in his program. He reviewed all the material he'd prepared thus far, then summarized his needs. His summary stated that students should be juniors and seniors carrying a "B" average, to be taught those occupational skills which would enable them to obtain jobs above the entry level. He put everything in a notebook for his supervisor, looking forward to discussing further with his supervisor the ideas he had for improving his courses.

NOTES

Compare your completed written critique of the Case Study with the Model Critique given below. Your response need not exactly duplicate the model response; however, you should have covered the same **major** points.

MODEL CRITIQUE

Mr. Liberty appears to be a very conscientious, hard-working teacher who truly desires to give students high quality vocational preparation. However, his approach to instruction is too isolated and unrealistic, and he has failed to accurately understand either the purposes of, or procedures for, developing a course of study. When Mr. Bell finally discusses the course of study with Mr. Liberty, the supervisor's voice is not likely to ring with approval.

One of the first indications that Mr. Liberty may have an unrealistic view of his program's effectiveness appears during Mr. Bell's presentation. The facts that (1) the various vocational teachers are each following their own separate plans with no coordination between or among them, and (2) students and parents have verified this lack of coordination between courses and between school preparation and occupational requirements, point to the existence of problems within the program. However, according to Mr. Liberty, the fault lies with his students. It never occurs to him, even after Mr. Bell's meeting, that his program could be at fault.

It is this mental set of his which causes him to make his first mistake. Instead of approaching the development of the course of study from scratch, he chose to simply document what he'd been doing for the past two years, in detail. At best, a course of study should not be based only on what you have been doing.

However, in this case, it's even worse since his **original** plans were not developed according to effective procedure, but were based only on the few references and some existing equipment, etc., he had in his classroom. Instead of seeing the development of a course of study as a means for structuring a course which most effectively meets the needs of the school, the students, the community, and business and industry, he sees it as a means for documenting the value of his existing program and for convincing his supervisor to raise the level of the students enrolling in his program.

The central fault in Mr. Liberty's procedure for developing a course of study was in his using a set of highly detailed lesson plans as the basis for the document. Having made this decision, he committed a series of unavoidable procedural and developmental errors. First, instead of starting by developing a broad course description to provide a framework for the remainder of the document, he plunged right into copying topics from his lesson plans and assigning time allocations based on his past experience.

In determining topics and time allocations for a course of study, he should have consulted a number of sources: existing curriculum guides, occupational analyses, the advisory committee, other vocational teachers in his service area, as well as his own experience. This would have ensured that the topics he was listing in fact described the skill areas he should cover to prepare his students for the occupation. It would also have helped ensure that his time allocations were realistic, accurate, and adequate in terms of the relative importance of the various topics. At present, he considers them to be correct in spite of the fact that his students are unable to get through the lesson activities in the time he has allotted.

Sequencing did not become an issue, because he assumed that his lesson plans were logically ordered. However, had he checked outside sources, he might have discovered that his sequencing could have been improved.

Procedurally, the next step he took (listing course objectives) was correct, but these objectives should not have copied from his lesson plans. His lesson plans contain precise, measurable student performance objectives, rather than broad course objectives which can be used as a basis for more detailed unit and lesson plans once the characteristics and needs of his students are known.

In addition, since the topics in these lesson plans were not based on a systematic review of relevant sources, the objectives he developed for the lesson plans will probably be similarly unrealistic in terms of occupational requirements. The criteria for these objectives are quite obviously **his** standards, not those of business and industry, and his

students are having a hard time meeting them. This indicates that they may be at too high a level both in terms of what industry requires and students can be expected to achieve.

Again, his development of the section on resources suffered from the same weaknesses as his other sections: too much detail, and lack of adequate sources. He simply listed every single resource he used in his day-to-day lessons rather than identifying the major resource and facility needs that would be required to support each course. And, he failed to check such sources as publishers' catalogues, suppliers' catalogues, existing curriculum guides, textbooks, members of his advisory committee. It is through such outside resources that a teacher ensures that the items listed in the course of study are of high quality, are up to date, and reflect actual occupational requirements and conditions.

His final step, preparing a course description, should have been his **first** step. It should be a guide, not a summary. In addition, instead of gearing it to reflect the goals of the school and the total vocational program, and the expectations of business, industry, and the community, he uses it to promote his own biases and present a set of specifications for the kinds of student he wants in his program.

Finally, he neglected an entire section of the course description, and it is this same neglect which colored the whole process he used in developing the course of study. He is attempting to plan a course of study for students with no consideration for **where** students will be working and what their employment **conditions** will be. Instead, he spent all his effort describing the type of student he wanted to train, and the high level of skill he expected students to attain, ignoring completely the occupational realities.

LEVEL OF PERFORMANCE: Your completed critique should have covered the same **major** points as the model response. If you missed some points or have questions about any additional points you made, review the material in the information sheet, The Course of Study, pp. 6–15, and the information sheet, Procedures for Developing a Course of Study, pp. 22–39, or check with your resource person if necessary.

Learning Experience III

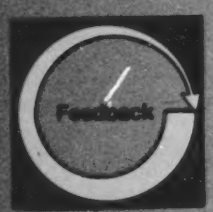
FINAL EXPERIENCE

While working in an **actual school situation,*** develop a course of study.

As part of your teaching duties (working individually, or as a member of a committee), develop and/or revise and update a course of study. This will include—

- obtaining input from a variety of relevant sources in developing the course of study
- developing the course description, course content, and general course objectives
- determining time allocations for each instructional area and/or unit
- identifying the references and resources required
- assembling the components into an appropriate format
- distributing the course of study to appropriate persons

NOTE: As you complete each of the above activities, document your activities (in writing, on tape, through a log) for assessment purposes.



Arrange to have your resource person review your written course of study and other documentation.

Your total competency will be assessed by your resource person, using the Teacher Performance Assessment Form, pp. 47–49.

Based upon the criteria specified in this assessment instrument, your resource person will determine whether you are competent in developing a course of study.

*For a definition of "actual school situation," see the inside back cover.

NOTES

TEACHER PERFORMANCE ASSESSMENT FORM

Develop a Course of Study (A–8)

Name _____

Date _____

Resource Person _____

Directions: Indicate the level of the teacher's accomplishment by placing an X in the appropriate box under the LEVEL OF PERFORMANCE heading. If, because of special circumstances, a performance component was not applicable, or impossible to execute, place an X in the N/A box.

	LEVEL OF PERFORMANCE					
	N/A	None	Poor	Fair	Good	Excellent
In developing (and/or revising and updating) a course of study, the teacher:						
1. followed the suggested procedures in the proper order	☐	☐	☐	☐	☐	☐
2. tapped the following sources, where appropriate, throughout the development process:						
a. members of the advisory committee	☐	☐	☐	☐	☐	☐
b. existing courses of study or curriculum guides	☐	☐	☐	☐	☐	☐
c. occupational analyses	☐	☐	☐	☐	☐	☐
d. other vocational teachers	☐	☐	☐	☐	☐	☐
e. state department personnel	☐	☐	☐	☐	☐	☐
f. teacher educators	☐	☐	☐	☐	☐	☐
g. relevant textbooks and references	☐	☐	☐	☐	☐	☐
The course description section of the course of study:						
3. reflects the goals of the school, the total vocational program, and the service area	☐	☐	☐	☐	☐	☐
4. covers the following elements:						
a. who is to be taught	☐	☐	☐	☐	☐	☐
b. what they are to be taught	☐	☐	☐	☐	☐	☐
c. what degree of skill they are to attain	☐	☐	☐	☐	☐	☐
d. where the training is to be used	☐	☐	☐	☐	☐	☐
e. general employment conditions	☐	☐	☐	☐	☐	☐
The course content section of the course of study:						
5. consists of a listing of major topics or instructional areas	☐	☐	☐	☐	☐	☐
6. includes topics which reflect the realities and requirements of actual occupational conditions	☐	☐	☐	☐	☐	☐

	N/A	None	Poor	Fair	Good	Excellent
7. includes topics which are appropriate to the level of the students to be trained	☐	☐	☐	☐	☐	☐
8. includes topics which are logically sequenced	☐	☐	☐	☐	☐	☐
9. includes topics which clearly indicate the knowledge and skills to be acquired by students	☐	☐	☐	☐	☐	☐
The time allocations section of the course of study:						
10. clearly indicates a suggested amount of time per topic, instructional area, and unit	☐	☐	☐	☐	☐	☐
11. is calculated in terms of class hours or periods	☐	☐	☐	☐	☐	☐
12. is accurate and realistic	☐	☐	☐	☐	☐	☐
13. is consistent with the time allocated for the total course	☐	☐	☐	☐	☐	☐
The course objectives section of the course of study includes objectives which:						
14. are derived from the topics in the course content section	☐	☐	☐	☐	☐	☐
15. focus on the overall abilities and competencies to be acquired	☐	☐	☐	☐	☐	☐
16. include each of the following elements: a. what is to be learned	☐	☐	☐	☐	☐	☐
b. general occupational standards to be achieved	☐	☐	☐	☐	☐	☐
17. are organized (clustered and sequenced) into a course outline	☐	☐	☐	☐	☐	☐

	N/A	None	Poor	Fair	Good	Excellent
The references, resources, and facilities section includes:						
18. selected references and audiovisuals	☐	☐	☐	☐	☐	☐
19. items which are up to date	☐	☐	☐	☐	☐	☐
20. items which reflect actual occupational conditions and requirements	☐	☐	☐	☐	☐	☐
21. items which would be appropriate for the level of students to be trained	☐	☐	☐	☐	☐	☐
22. all items necessary for students to perform the job tasks listed in the course of study	☐	☐	☐	☐	☐	☐
The format in which the course of study is presented is:						
23. appropriate for the service area	☐	☐	☐	☐	☐	☐
24. readable and understandable	☐	☐	☐	☐	☐	☐
25. organized in a logical sequence	☐	☐	☐	☐	☐	☐
The completed course of study was:						
26. reviewed and approved by the occupational advisory committee	☐	☐	☐	☐	☐	☐
27. reviewed and approved by the school administration	☐	☐	☐	☐	☐	☐

LEVEL OF PERFORMANCE: All items must receive N/A, GOOD, or EXCELLENT responses. If any item receives a NONE, POOR, or FAIR response, the teacher and resource person should meet to determine what additional activities the teacher needs to complete in order to reach competency in the weak area(s).

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ABOUT USING THE CENTER'S PBTE MODULES

Organization

Each module is designed to help you gain competency in a particular skill area considered important to teaching success. A module is made up of a series of learning experiences, some providing background information, some providing practice experiences, and others combining these two functions. Completing these experiences should **enable** you to achieve the **terminal** objective in the final learning experience. The final experience in each module always requires you to demonstrate the skill in an actual school situation when you are an intern, a student teacher, or an inservice teacher.

Procedures

Modules are designed to allow you to individualize your teacher education program. You need to take only those modules covering skills which you do not already possess. Similarly, you need not complete any learning experience within a module if you already have the skill needed to complete it. Therefore, before taking any module, you should carefully review (1) the Introduction, (2) the Objectives listed on p. 4, (3) the Overviews preceding each learning experience, and (4) the Final Experience. After comparing your present needs and competencies with the information you have read in these sections, you should be ready to make one of the following decisions:

- that you do not have the competencies indicated, and should complete the entire module
- that you are competent in one or more of the enabling objectives leading to the final learning experience, and thus can omit that (those) learning experience(s)
- that you are already competent in this area, and ready to complete the final learning experience in order to "test out"
- that the module is inappropriate to your needs at this time

When you are ready to take the final learning experience **and** have access to an actual school situation, make the necessary arrangements with your resource person. If you do not complete the final experience successfully, meet with your resource person and arrange (1) to repeat the experience, or (2) complete (or review) previous sections of the module or other related activities suggested by your resource person before attempting to repeat the final experience.

Options for recycling are also available in each of the learning experiences preceding the final experience. Any time you do not meet the minimum level of performance required to meet an objective, you and your resource person may meet to select activities to help you reach competency. This could involve (1) completing parts of the module previously skipped; (2) repeating activities; (3) reading supplementary resources or completing additional activities suggested by the resource person; (4) designing your own learning experience; or (5) completing some other activity suggested by you or your resource person.

Terminology

Actual School Situation . . . refers to a situation in which you are actually working with, and responsible for, secondary or post-secondary vocational students in a real school. An intern, a student teacher, or an in-service teacher would be functioning in an actual school situation. If you do **not** have access to an actual school situation when you are taking the module, you can complete the module **up to** the final learning experience. You would then do the final learning experience later; i.e., when you have access to an actual school situation.

Alternate Activity or Feedback . . . refers to an item or feedback device which may **substitute** for required items which, due to special circumstances, you are unable to complete.

Occupational Specialty . . . refers to a specific area of preparation within a vocational service area (e.g., the service area Trade and Industrial Education includes occupational specialties such as automobile mechanics, welding, and electricity).

Optional Activity or Feedback . . . refers to an item which is not required, but which is designed to **supplement** and enrich the required items in a learning experience.

Resource Person . . . refers to the person in charge of your educational program; the professor, instructor, administrator, supervisor, or cooperating/supervising/classroom teacher who is guiding you in taking this module.

Student . . . refers to the person who is enrolled and receiving instruction in a secondary or post-secondary educational institution.

Vocational Service Area . . . refers to a major vocational field: agricultural education, business and office education, distributive education, health occupations education, home economics education, industrial arts education, technical education, or trade and industrial education.

You or the Teacher . . . refers to the person who is taking the module.

Levels of Performance for Final Assessment

N/A . . . The criterion was not met because it was **not applicable** to the situation.
None . . . **No attempt** was made to meet the criterion, although it was relevant.
Poor . . . The teacher is unable to perform this skill or has only **very limited ability** to perform it.
Fair . . . The teacher is unable to perform this skill in an acceptable manner, but has **some ability** to perform it.
Good . . . The teacher is able to perform this skill in an **effective** manner.
Excellent . . . The teacher is able to perform this skill in a **very effective** manner.

Titles of The Center's Performance-Based Teacher Education Modules

Category A: Program Planning, Development, and Evaluation

- A-1 Prepare for a Community Survey
- A-2 Conduct a Community Survey
- A-3 Report the Findings of a Community Survey
- A-4 Organize an Occupational Advisory Committee
- A-5 Maintain an Occupational Advisory Committee
- A-6 Develop Program Goals and Objectives
- A-7 Conduct an Occupational Analysis
- A-8 Develop a Course of Study
- A-9 Develop Long-Range Program Plans
- A-10 Conduct a Student Follow-Up Study
- A-11 Evaluate Your Vocational Program

Category B: Instructional Planning

- B-1 Determine Needs and Interests of Students
- B-2 Develop Student Performance Objectives
- B-3 Develop a Unit of Instruction
- B-4 Develop a Lesson Plan
- B-5 Select Student Instructional Materials
- B-6 Prepare Teacher-Made Instructional Materials

Category C: Instructional Execution

- C-1 Direct Field Trips
- C-2 Conduct Group Discussions, Panel Discussions, and Symposiums
- C-3 Employ Brainstorming, Buzz Group, and Question Box Techniques
- C-4 Direct Students in Instructing Other Students
- C-5 Employ Simulation Techniques
- C-6 Guide Student Study
- C-7 Direct Student Laboratory Experience
- C-8 Direct Students in Applying Problem-Solving Techniques
- C-9 Employ the Project Method
- C-10 Introduce a Lesson
- C-11 Summarize a Lesson
- C-12 Employ Oral Questioning Techniques
- C-13 Employ Reinforcement Techniques
- C-14 Provide Instruction for Slower and More Capable Learners
- C-15 Present an Illustrated Talk
- C-16 Demonstrate a Manipulative Skill
- C-17 Demonstrate a Concept or Principle
- C-18 Individualize Instruction
- C-19 Employ the Team Teaching Approach
- C-20 Use Subject Matter Experts to Present Information
- C-21 Prepare Bulletin Boards and Exhibits
- C-22 Present Information with Models, Real Objects, and Flannel Boards
- C-23 Present Information with Overhead and Opaque Materials
- C-24 Present Information with Filmstrips and Slides
- C-25 Present Information with Films
- C-26 Present Information with Audio Recordings
- C-27 Present Information with Televised and Videotaped Materials
- C-28 Employ Programmed Instruction
- C-29 Present Information with the Chalkboard and Flip Chart

Category D: Instructional Evaluation

- D-1 Establish Student Performance Criteria
- D-2 Assess Student Performance: Knowledge
- D-3 Assess Student Performance: Attitudes
- D-4 Assess Student Performance: Skills
- D-5 Determine Student Grades
- D-6 Evaluate Your Instructional Effectiveness

Category E: Instructional Management

- E-1 Project Instructional Resource Needs
- E-2 Manage Your Budgeting and Reporting Responsibilities
- E-3 Arrange for Improvement of Your Vocational Facilities
- E-4 Maintain a Filing System
- E-5 Provide for Student Safety
- E-6 Provide for the First Aid Needs of Students
- E-7 Assist Students in Developing Self-Discipline
- E-8 Organize the Vocational Laboratory
- E-9 Manage the Vocational Laboratory

Category F: Guidance

- F-1 Gather Student Data Using Formal Data-Collection Techniques
- F-2 Gather Student Data Through Personal Contacts
- F-3 Use Conferences to Help Meet Student Needs
- F-4 Provide Information on Educational and Career Opportunities
- F-5 Assist Students in Applying for Employment or Further Education

Category G: School-Community Relations

- G-1 Develop a School-Community Relations Plan for Your Vocational Program
- G-2 Give Presentations to Promote Your Vocational Program
- G-3 Develop Brochures to Promote Your Vocational Program
- G-4 Prepare Displays to Promote Your Vocational Program
- G-5 Prepare News Releases and Articles Concerning Your Vocational Program
- G-6 Arrange for Television and Radio Presentations Concerning Your Vocational Program
- G-7 Conduct an Open House
- G-8 Work with Members of the Community
- G-9 Work with State and Local Educators
- G-10 Obtain Feedback about Your Vocational Program

Category H: Student Vocational Organization

- H-1 Develop a Personal Philosophy Concerning Student Vocational Organizations
- H-2 Establish a Student Vocational Organization
- H-3 Prepare Student Vocational Organization Members for Leadership Roles
- H-4 Assist Student Vocational Organization Members in Developing and Financing a Yearly Program of Activities
- H-5 Supervise Activities of the Student Vocational Organization
- H-6 Guide Participation in Student Vocational Organization Contests

Category I: Professional Role and Development

- I-1 Keep Up-to-Date Professionally
- I-2 Serve Your Teaching Profession
- I-3 Develop an Active Personal Philosophy of Education
- I-4 Serve the School and Community
- I-5 Obtain a Suitable Teaching Position
- I-6 Provide Laboratory Experiences for Prospective Teachers
- I-7 Plan the Student Teaching Experience
- I-8 Supervise Student Teachers

Category J: Coordination of Cooperative Education

- J-1 Establish Guidelines for Your Cooperative Vocational Program
- J-2 Manage the Attendance, Transfers, and Terminations of Co-Op Students
- J-3 Enroll Students in Your Co-Op Program
- J-4 Secure Training Stations for Your Co-Op Program
- J-5 Place Co-Op Students on the Job
- J-6 Develop the Training Ability of On-the-Job Instructors
- J-7 Coordinate On-the-Job Instruction
- J-8 Evaluate Co-Op Students' On-the-Job Performance
- J-9 Prepare for Students' Related Instruction
- J-10 Supervise an Employer-Employee Appreciation Event

RELATED PUBLICATIONS

- Student Guide to Using Performance-Based Teacher Education Materials
- Resource Person Guide to Using Performance-Based Teacher Education Materials
- Guide to the Implementation of Performance-Based Teacher Education

For information regarding availability and prices of these materials contact—

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